The Builder.

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Armorial Bearings of Counties and Cities.

IT is mainly from the artistic or architectural point of view that the subject of public armorial bearings is of interest to us. There are those no doubt—and probably some among our own readers—to whom heraldry is a kind of sacred study, to be pursued in the most serious spirit, and with a lofty scorn for all those who are either indifferent or heretical in their heraldic creed. This spirit of intolerance and contempt for the outer barbarian which is characteristic of devout heraldic students, naturally arises from the fact that the study is one which comparatively few persons go into, and which can only be understood in detail by the devotion of the best part of one's time to it. Hence those who have chosen thus to devote themselves form a small band of experts, learned in a subject which they have pretty much to themselves, and with a corresponding degree of contempt for the rest of mankind, who are unacquainted with what are called the "laws of heraldry," which are spoken of very much as if they were the laws of nature, instead of being in fact merely the conventions under which a semi-barbarous society arranged a system of pictorial signs at a time when scarcely any one could read writing, and when, the chief business of life being fighting, it was desirable to have some sign to fight under, recognisable by friends and foes. That is all that heraldry originally meant. The glamour thrown over it by modern writers is merely a matter of poetic association with a practice which carries us back into past and perhaps more picturesque times. And certainly the system of a distinctive device for states, cities, or individuals, is in itself an element of the picturesque in life which one would be sorry to lose. That is the one justification for the assumption of armorial bearings in the present day. It is a little bit of the decoration of life; if a useless it is at least a very harmless one; and ...s the interest attaching to the keeping up of an ancient practice. In the case of armorial bearings which have been borne by the same city or the same person for many generations past there is of course, added to this picturesque element, a real historic interest.

In the picturesque sense perhaps the armorial bearings of cities are of more interest and value than those of individuals, since they enter into and often form an important element in the decoration of public buildings. Hence there is much that is both useful and interesting for architects in the large collection of the armorial bearings of counties and cities which Mr. Fox-Davies and Mr. Crookes have brought together for us.* These represent the arms "as used and as authorised," a distinction which Mr. Fox-Davies draws very decisively indeed, both in his preface and in the cyclopædia of contents. Nothing can exceed his lofty contempt for the corporations (not a few) which display arms to which they can show no legal title, and the history of which will not bear investigation. "There is no law, and I think more is the pity, which requires any corporation to obtain a grant of arms; there is no law, and I will go further, and say there is no *custom*, which requires a corporation to *use* arms; consequently there is no excuse for a coat-of-arms being invented by a seal engraver; there is no excuse for the smallest display of a *bogus* escutcheon, and as emphatically as I am able I must protest against the unauthorised manufacture of bogus arms. . . . . As for the design upon your seal, you can make it after any fashion you please; you may draw and engrave anything you can imagine upon it without breaking any law written or unwritten, so long as you refrain from placing your design or any part of it on an escutcheon or displaying it as armorial insignia. With every other conceivable form of ornament and decoration to choose from, that escutcheon seems to be a standing temptation to which few do not succumb. Was a better argument ever wanted or suggested as to the *decorative* character of armorial bearings?"

That is just the point; the value of armorial bearings in the present day, especially for cities, is mainly decorative or picturesque, and corporations do not like to see another city with this ornament when they are without it. What Mr. Fox-Davis means by a bogus coat-of-arms is, we presume one which has not been obtained by royal grant through the Heralds' College. According to his own statement, however, there is nothing illegal in a city choosing and using any device it pleases, so that the crime of "bogus arms" is not quite so flagrant a one as might be supposed from his indignant manner of denouncing it. However, we quite concur with him that as long as armorial bearings are used as decorations, it is suitable that they should all be on the same footing, and that especially a modern town which has any chance of having a history before it will be in a more dignified position if it has its armorial bearings formally registered in the proper quarter, and after payment of the proper fees. Only in this way can it be said to bear arms on the same footing with an ancient city which has obtained them by royal grant. In cases, however, where there has been originally no formal and legal grant of arms, there is a considerable distinction to be drawn between armorial bearings which, however selected or obtained at first, have been used for a long period—say a couple of centuries or so—and a brand-new and unauthorised selection. The former has, at all events, historical interest. In the case of private armorial bearings, the Heralds' College recognises the claims of custom to some extent; so far, at least, that there is always a disposition to confirm with a legal grant, if applied for, armorial bearings which are shown to have been used by the family for some generations, even if of no original authority.

There is reason in the author's criticism as to the manner in which modern city arms are sometimes compounded. A very common practice, he says, is to take the whole or a portion of the achievement of some local "bigwig." Mr. Fox-Davies has nothing to say against "allusion" being made to local bearings; on the contrary he thinks it a commendable practice, but there must be no chance of the arms of the town being confused with the arms of the person. He mentions the instance of Wolverhampton, which "supports its own so-called coat

* "The Book of Public Arms; a Cyclopædia of the Armorial Bearings, Heraldic Devices, and Seals, as authorised and as used, of the Counties, Cities, and Universities of the United Kingdom." Derived from the Official Records. Compiled and edited by Arthur Charles Fox-Davies and M. E. B. Crookes. Edinburgh: T. C. & E. C. Jack; 1894.

with an escutcheon of the Leveson-Gower arms surmounted by a ducal coronet, 'by his Grace's permission.'" "Is it not known," says our author indignantly, "that *no* person can give, sell, or bequeath his coat-of-arms to another person? It is not his absolute property?" The patent is for himself and his descendants; to go outside them requires a fresh grant. This is common sense no doubt, if confusion is to be avoided as to any meaning which armorial bearings are still to have. Mr. Fox-Davies is also contemptuous, and we sympathise a good deal with him, as to the habit of tradesmen to use the arms of their city as a mark on their goods. The armorial bearings, as he truly says, were not granted to be put on Smith's perambulators or on Brown's sugar-bags, but "to be borne and used for ever hereafter by the mayor, aldermen, and burgesses of the said town of ——————, and their successors in office in their corporate capacity, on shields, banners, seals, or otherwise according to the laws of arms," &c. To allow people to make a trade-mark of them is certainly to make them very cheap. But where we are entirely and emphatically in sympathy with the author is in his criticisms on some of the absurd devices, equally un-heraldic and un-decorative, which are adopted by modern towns whose Corporations think they must needs have armorial bearings. One of the most ludicrous of these is that of Southend-on-Sea, which the author says might best be described as "Illustrated Bits." The escutcheon is divided into three panels (we spare the reader the orthodox phraseology), one containing a view of a pier with the sea and ships, another a field and a well, another a view of a church; over all an inescutcheon, superimposed on the centre of the main one, bearing three scimitars,* "the arms usually attributed to the county of Middlesex." Over all is a crest of a ship in full sail. Now, from a decorative point of view, the devices on an escutcheon should of course not be realistic, but conventionalised and suggestive only; this sketching of natural scenery on it is perfectly puerile. The armorial escutcheon of Crewe is equally ridiculous, in the same kind of manner.

It is noteworthy, generally, that modern armorial bearings are chosen much more with the view of conveying some special symbolical meaning appropriate to the city to which they refer than was usually the case with ancient ones. To this we see no objection whatever, provided that they are treated in a decorative and symbolical form, not realistically. In a great many of the old armorial bearings given here it is difficult to see any symbolical meaning in reference to the city they belong to, or the slightest connexion between the design and the motto (where there is one). There may, however, in many cases have been a significance at the time in the emblems chosen which escapes us now. What, for instance, is the hidden meaning of the arms of Dublin—three castles with flames issuing from their turrets, and the motto, "Obedientia Civium Urbis Felicitas"? Artistically, however, this is a striking escutcheon. County Down, on the same page, is another example of the modern realistic treatment; a ship below; on a band in the centre a sheaf with a weaver's shuttle on each side; and above two perspective representations of spinning-wheels: motto, "Industria." This remarkable conglomeration has been recently invented, it appears, to express the revived industrial efforts or ambition of the county. That is certainly an example of the way *not* to do it. A good contrast in the way of a modern escutcheon is that of Harrogate, only granted in 1884, but with the dignity and conventional character of the ancient style about it, and a good deal of ingenious symbolism, with the rather dry and prosaic motto "Arx Celebris Fontibus." The arms of Yarmouth are significant; three lions and three fishes occupy respectively the two sides of the shield, but partially overlapping and cut off at the centre dividing line; motto, "Rex et Nostra Jura," a plain intimation that loyalty was not to stand in the way of local privileges. This curious escutcheon is an old one, apparently, but the date is not given. That of Hastings, also old, divides lions and ships on the same principle, and Sandwich, Rye, and Deal have somewhat similar devices.

It cannot be said however that the majority of our ancient arms show any very high type of decorative design. What can be said for them is that they seldom attempt realism, and that consequently they have an architectural character which eminently fits them for use as decorative adjuncts to a building, whether in the form of carving, inlay, or stained glass. There is a bold style about the London arms, with the dragon supporters, and the helmet and foliage in the crest; though the crest and supporters are said to be of no authority whatever. Edinburgh is a striking design, though the woman and the hart make a very bad balance in a decorative sense; the motto, "Nisi Dominus Frustra," has that pithiness of expression which belongs to a good Latin motto, though it is difficult to trace any relation between it and the design. Generally speaking, one does not find much that is striking or suggestive in the ancient mottoes of our city arms; nothing to compare with the poetically suggestive one of Paris, the ship with the inscription "Fluctuat Nec Mergitur." The London "Domine Dirige Nos" is no doubt a good, wholesome, religious motto, but it lacks distinctiveness. Of the special features in the old blazonry, it may be observed that the ship and the castle are favourites, and that both, properly treated, lend themselves very well to heraldic design. One of the most singular and illogical of the modern (or at least unauthorised) devices is that of Strabane; below, a man rowing a boat; above, a castle balanced on the turrets of two others; motto, "Concordia Crescit." A more unmeaning jumble it would be difficult to find. Bath, a very simple escutcheon, is one of the best in regard to decorative effect and significance; masonry with a battlemented finish occupies the lower half of the field, wavy lines significant of water, the upper half; an upright sword crosses and unites the whole. This is an old design (date not given), and its simplicity and decorative effectiveness are worth the attention of the compilers of modern escutcheons.

There is a good deal of curious information in the encyclopædic portion of the book, in which we observe that the descriptions of all the genuine or authorised armorial bearings are given in Roman type, and those of the unauthorised ones in italics, so that the reader can distinguish between them at a glance. The large collection of engravings will be very useful to architects for reference, in designing decorations in which this class of object is to be included.

* "Gules charged with three seaxes fesseways proper."

NOTES.

WE print on another page a very plainly-worded letter from Mr. T. G. Jackson, A.R.A., on the subject of that insulting practice on the part of tradespeople and manufacturers of offering commissions to architects to use their goods, against which we have protested again and again. We recommend Mr. Jackson's letter to the attention both of tradesmen and architects. Mr. Jackson states plainly that he keeps a list of all who have made such offers to him, and takes care that they shall never be employed on any work of his. If all architects would do the same, the mischief would have been stamped out long ago. It is obvious that they do not all do so, as manufacturers would not go on sending about such circulars if they never got any response to them. Mr. Jackson's letter will at all events, it is to be hoped, prove to the latter that they had better choose their men a little more carefully, and that they are running very considerable risk to their own interests in sending out such circulars broad-cast among architects. The essential immorality of the procedure (which some tradesmen appear unable to understand) is that the architect is engaged to look to the interests of his client, and the tradesman who offers him a commission is bribing him to act in the tradesman's interest instead of in the client's. The thing only needs to be put in that way to show that it is a proceeding that must be contemptible in the eyes of every honourable man; and it is to be hoped that this outspoken letter of Mr. Jackson's will have some definite effect in checking the practice. While on this subject we may refer also to another and more specious way of alluring architects into occupying a questionable position, by giving them a preference in the allotment of shares of companies interested in building materials. We have a circular before us now, issued a few weeks ago by a large firm of ventilating engineers, "of London and Glasgow," addressed to architects and marked "private," and stating that they are desirous to give their "friends" the first chance of securing the preference shares in their company, &c. The expectation of course is that architects will take shares, and will then serve their own interests and the company's at the same time by specifying the company's goods. One architect to whom this circular had been sent forwarded it to us with a strong comment. We can only recommend architects, if they wish the profession to be honourable, to put all such share invitations in the fire.

THE annual meeting of the subscribers to the British school at Athens on Wednesday, while it gave evidence of much useful work going on, and of the interest felt in such work by a minority of the more educated portion of Englishmen, again brought into notice the discreditable indifference of the English Government towards all archæological enterprise. The French and German schools at Athens are each subsidised by their Governments; the French school enjoys an income of 3,000*l.* a year, while it is with difficulty that we can find 450*l.* a year to keep the British school going. How long is this discreditable state of things to continue?

THE meeting at the Mansion House on Friday last week, under the auspices of the "City Church Preservation Society" to protest against the destruction of City churches, was very well attended, and, as might be expected, very unanimous, since people do not take the trouble to attend such a meeting unless they approve of its purpose. It was, however, essentially a meeting of churchmen, and it is difficult to suppress a smile at the assumption made by all the speakers that the Church of England point of view was the only possible or existing point of view in relation to the subject. This narrowness is bad for their cause, as in fact there are a great many people of other religious denominations than those of the Church of England who would nevertheless sympathise in the desire to preserve the City churches; and if the society in question addressed themselves more to the purely architectural interest of the question they would be likely to get a wider support. We may note however, inasmuch as one of the arguments for destroying the churches is that they have no congregations, that some very conclusive statistics were given by one speaker in regard to the numbers of communicants at certain churches on Easter Sunday in the present year, compared with the recorded numbers on the same day about fifteen or twenty years ago. We did not take a note of the precise numbers, but they were somewhat in the general proportion of four or five at the earlier date to about 150 at present. This of course shows that there is a renewed practical interest in the City churches, as places of worship, to which every weight ought to be given. The Rector

of St. Nicholas Cole Abbey, however, touched on an argument of wider application when he remarked, in the course of an excellent speech, that these old churches were, even to those who did not wish to use them for actual religious worship in the ordinary sense, places available for a brief rest and escape from the turmoil of daily life in a great city. That idea would appeal to many people beyond the pale of the Church of England. There is a further suggestion which might be made, though we fear it would shock the feelings of the City Church Preservation Society—viz., that where from exterior circumstances a church has ceased to be available or useful for the object of public worship for which it was originally built, it is a perfectly practicable course to secularise the building and utilise it for some such purpose as a museum, rather than destroy a fine building in response to a cry that it was useless. That would at least be better than pulling it down. On the architectural ground we are entirely in sympathy with the object for which the meeting was called; we only think the Society should cast its net wider for support. The recent proposal to pull down such a building as St. Mary Woolnoth, one of the most interesting and charming interiors in London, rather than clear out the remains which had rendered it insanitary, we regard as perfectly contemptible. Such buildings are records of one of the most interesting phases in the architectural history of this country, which, once destroyed, no power can replace.

AN attempt was made in Committee of the Finance Bill on Tuesdayto exempt works of art from the new death duties, but it was quite unsuccessful. We confess that, if property has to be taxed, we can scarcely see why works of art should escape from taxation. They are collected very often merely as investments, and we are doubtful whether the fact that duty has to be paid on them at the owner's death will make him any the less keen to collect them. It is also obvious that it would not be easy to draw a distinction between works of art and money left to be expended on works of art. The demand was a plausible but not a sound one.

THE death of Sir Henry Layard removes one of the most prominent and fortunate of the older school of English archæologists of the present era. Few explorers in the present day can hope for such a striking and sensational success as that which rewarded his explorations in Assyria, and which have connected his name for all time, one may suppose, with the remains of the mystical sculptures of Nineveh which he brought to light. There are new successes in store for diligent archæologists, no doubt, but it is hardly likely that at the present day anything remains to be discovered so remarkable, and of such peculiar and striking interest as this. Layard had the sagacity to select a site of great promise and previously unexplored, and his archæological ambition received a reward probably beyond his fondest expectations. It is noteworthy that in his case, as in our own day, it was only with the greatest difficulty, and only after long delay, that the Government of his own country could be moved to do anything to assist the explorer, either with money or means.

THERE has recently been something almost farcical about the proceedings of the Coal Trade Conciliation Board, and some rather childish tactics have been resorted to by a section of its members. They have, to use a parliamentary phrase, shown a disposition to "take advantage of all the forms of the House," in order to evade the discussion of unpalatable subjects. Fortunately, however, this peculiar method of procedure has led to no rupture, and a full business meeting of the board will take place on the 19th inst., presumably to decide whether the state of trade warrants any alteration in the rate of wages, the result of which will be awaited with interest. While the deplorable state of things occasioned by labour disputes in America tends to make us a little less unwilling to "bear the ills we have," the remembrance of past strikes in this country should be an incentive to every member of a conciliation board to do his part towards making the body with which he is connected, worthy of its title. The Scotch coal strike seems to have excited comparatively little interest in England, although it has really assumed extensive proportions. This may be accounted for by the fact that a considerable quantity of coal is being sent into Scotland from this side of the border, and is doubtless partly due to the dramatic nature of the incidents daily recorded in connexion with the great American labour war diverting attention from the quieter struggle nearer home.

THE return recently published showing the great number of accidents which have taken place in Rotten-row has attracted some public attention. These accidents have been largely attributed to bad horsemanship, but in most cases, though this may be the proximate cause, yet the true cause is the bad state of this ride. The construction is of such a nature that it is treacherous for horses. In places it is rotten and in holes. In other parts it is hard and lumpy. The horse-raking which goes on, though it gives an apparently level surface, is calculated to make the trap more deadly, since it gives riders a false security. An old gentleman who would not think of entering the hunting-field, supposes that he may jog about the Row in safety; his horse strikes his foot against one of the hard lumps, or places it in a sticky hole, which retains it sufficiently to cause the animal to blunder on to its nose, and of course the rider falls off, and from his very age receives a severe physical shock, even if he breaks no bones. The fact is, that if there is to be a public ride, it should be constructed on sound principles, and be a place where persons may obtain their exercise in safety. In wet weather the Row is worse than a clay lane in Cheshire, which is about the worst specimen of a highway to be found in this country: a proper construction should allow it to be comparatively dry even in wet weather, without, of course, being hard. If the Office of Works demur to any improvement on the ground of expense, we do not think it would be an unreasonable thing to make those who use the Row pay for it in part. It is the resort of a comparatively limited number, who are well to do, and who could easily afford to pay something for the privilege of using this portion of Hyde Park for horse exercise.

ACCORDING to Dr. R. Bruce Low's Report to the Local Government Board on an outbreak of enteric fever in the Urban Sanitary District of Shildon and East Thickley, in the County of Durham, tells the usual tale of bad drainage and faulty disposal of refuse. The district was sewered by pipe sewers in 1878, but some of these have been badly laid. Nearly all the sewer ventilators on the roadways, more especially at New Shildon and East Thickley, have been gradually covered up during the last few years owing to local complaints as to smells at times issuing from them. The sewers have consequently had of late little or no ventilation. There is a separate drainage system for the surface water from the streets, but in numerous instances house drains have been connected with this system, and it is admitted that sewage gains access to the surface water drains which discharge into adjacent watercourses. These watercourses run through all parts of the district. They have been covered in, and culverted over in many places, and houses have even been built over them. Yard gulleys are frequently badly trapped, or not trapped at all, and it is quite common to find the yard gulley situated immediately underneath the window of the pantry in which the food supplies of the family are kept. Excrement and refuse disposal is chiefly by means of large, deep, uncovered midden privies, situated in back yards and often in proximity to dwellings. The bottom of such middens is seldom paved or made water-tight. In emptying some of them it is found necessary, owing to their position, first of all to throw out the contents by spade into the yard, or upon the sidewalk, thus polluting the surface and creating nuisance. As in other colliery districts, a large amount of refuse consists of unburnt coal and large ashes which swell the bulk of the midden contents and add materially to the labour of removal. The refuse is carted away by the *employés* of the Local Board to tips in the neighbourhood, or is spread by farmers upon land in the vicinity. Owing to the amount of ashes in the refuse it is not much in demand as manure, and consequently it is given away, whenever possible, to farmers or any others who will accept of it. Large quantities of this refuse, however, remain unused and huge heaps of it can be seen at different places just on the confines of the district. Dr. Low, however, attributes the prevalence of disease in the district mainly to the unventilated state of the sewers, and the defective traps and gullies, through which sewer air forces its way under certain meteorological conditions.

THE townsfolk of Wolverhampton have just celebrated the nine-hundredth anniversary of St. Peter's, formerly St. Mary's Collegiate Church, which represents the religious house founded by Wulfruna, daughter (or sister) of Ethelred at Hampton on, as is said, the site of a pagan temple built by Wulfere, a son of Penda, King of the Mercians. In Henry III.'s reign the church was enlarged and its patrocinity changed to that of St. Peter. Some authorities say that in the reign of Edward III. the then existing church was taken for a choir, and a nave and tower (at the cross) added. In a report made for the Ecclesiastical Commissioners Mr. Ewan Christian writes:—

"I think . . . that the south aisle and western nave walls together with those of the lower part of the tower, and south transept, enclosed a church no part of the interior of which is now standing."

He goes on to say that the lower part of the tower, and the aisles are Late Decorated. In accordance with them Mr. Christian designed his new work for rebuilding the chancel or choir. The tower, in four stages, has angle-buttresses, ending in crocketted pinnacles, with ogee windows in the upper two stages, and pannelled battlements. Of the bells, seven were cast in 1698, the great bell, by Henry Bailey, in 1740. The chancel had been rebuilt, with the deanery house, in 1682-4, the fabric having been greatly damaged during the Commonwealth. Edward IV. united the deanery with that of Windsor; Edward VI. bestowed the collegiate revenues upon the Duke of Northumberland, but his successor restored the collegiate establishment, and James I. confirmed its union with Windsor, which continued until the death of Dr. Hobart in 1846, the last Dean of Wolverhampton. Five years later the revenues were vested in the Ecclesiastical Commissioners, who gave 4,000*l.* towards the restoration, on which about 25,000*l.* were spent. In 1610 the Merchant Tailors' Company of London built a west gallery for the Grammar School founded here by Sir Stephen Jenyns, Knight, Alderman of London.* St. Catherine's, or Lane's, chapel contains monuments to Colonel John Lane, of Bentley, the noted Royalist, and others of that house. In the chancel is the statue of Richard Leveson, who served under Drake and at the defeat of the Armada: its pedestal was destroyed.

* Founded 1513. Here were educated Sir William Congreve, and John Abernethy.

That monument was made by Le Sueur, for 300*l.* His agreement, July 1, 1633, for a bronze figure to be 6 ft. and 3 pouces high, on a black marble pedestal 6½ ft. long by 5½ ft. high, is transcribed, from the original at Trentham, in the Reverend Dr. Oliver's "Account of the Collegiate Church of Wolverhampton."

AN address was presented to Sir Stuart Knill, at Norfolk House, on Wednesday, on the part of the Council of the "Catholic Union of Great Britain," in commemoration of his having held the office of Lord Mayor of London, which is of interest to us from an artistic point of view, in regard to the beautiful design of the silver gilt casket in which it was enclosed, and which is a welcome contrast to the usually common-place character of such objects. It is designed by Mr. Bentley,* and rather suggests the idea of a reliquary, with a stem rising from a base of the usual form of base of a mediæval chalice; the upper part of the stem, which is pierced, and contains a statuette placed in the opening, supports a cylinder, placed crosswise, and around and above this twines a tracery of metal bars, branching off into brackets carrying statuettes, the top bracket carrying a crucifix. The statuettes represent Saints whose names are connected with the City of London. The whole is a charming piece of work, and shows what may be done with things of this kind when those concerned with them have the sense to go to an artist for a design, instead of ordering a thing from a shop.

SOME members of the architectural profession would be very glad to have an opportunity of studying the collected competition designs for Christ's Hospital Schools, if the Governors would have a public exhibition of them. The competition has attracted so much attention and interest that an exhibition of the drawings would be very desirable, and would interest a good many people.

OF the pictures by Mr. Theodore Roussel exhibited at Messrs. Dowdeswell's Gallery the portraits are the most serious work, the full-length "Portrait of a Lady" (31) especially. The smaller works, mostly landscape, are studies in effects of light and colour without any finish of detail, which have their interest, but it is not of a very solid kind.

THE anger of some of the daily and weekly papers of the day at our remarks on the sham architecture of the Tower Bridge, coupled with their entire inability to understand the point of those remarks, is rather amusing. The anger is easily comprehensible, for it is always irritating, after you have indulged in gushing admiration of a work, to find that someone who has every right to know better on that particular subject has no admiration for it at all, but regards it rather with ridicule. Consequently, the line which some of our lay contemporaries have taken has been to pretend to disparage our judgment on architecture altogether, though they must certainly know in their own minds that we are, at all events, better judges of such a matter than paragraph-writers on a general paper, who have probably never given a thought to architectural design in their lives. But not one of our critics, as far as we have seen, can even understand what we did say. They all represent us as having spoken contemptuously of the bridge (in an architectural sense) merely because the steelwork was concealed by masonry. Now, it is quite an open question, in any case, whether it was worth while to spend so much money on enormous erections of masonry which are constructively unnecessary, merely to conceal a steel construction which was supposed to be ugly, or whether that is a proceeding in accordance with common sense. But it was not on that ground merely that we spoke so strongly in condemnation of the structure. The laity have entirely failed to understand the point of our criticism, which would be quite obvious to architects, most of whom, we believe, will have concurred in it entirely. To explain the point further would be of no use, as those who did not understand it the first time would understand no better the second time.

* As usual, the daily papers which describe the work say nothing about the designer. These things are supposed by the average press reporter to design themselves.

THE LONDON STREETS AND BUILDINGS BILL, 1894.

BY MR. ARTHUR CATES.

THIS Bill, on the 6th inst., after some twenty sittings of the Select Committee of the House of Commons, was so far disposed of that it will be immediately brought up for third reading, on passing which it will go before a Select Committee of the House of Lords for further consideration.

The Bill having been introduced as a private Bill, and having been so treated throughout, is not so readily accessible as a public Bill would have been; and as it has been most materially modified since it was read a second time, the following brief abstract of some of the principal novel features introduced (apart from consolidation and minor amendments and improvements) deserves careful consideration.

PART I.—FORMATION AND WIDENING OF STREETS.

Clause 5.—*Conversion of Ways into Streets.*

Sub-section 4 provides that before any person commences to widen any street on either side to a less extent than the prescribed distance, *i.e.*, 20 ft. from the centre of the road for streets adapted for carriage traffic, and 10 ft. from the centre for footways, he should give notice to the Council in writing, with a plan of the proposed widening, and shall not, except with express sanction of the Council, commence to execute such widening until after two months from the date of such notice.

Clause 7.—*Greater width of street may be required in certain cases.*

Authorises the Council where they may deem it expedient in the public interest, that the street, by reason of its length or importance, or being likely to form part of an important line of communication, or for other sufficient reason, should be of greater width than 40 ft, to direct that any new street about to be formed or laid out, may throughout, or in part, be of a greater width not exceeding 60 ft.

Clause 8.—*Position of New Buildings with Reference to Streets.*

Sub-section 1 provides that no new building or its external fence or boundary of the forecourt shall, without the consent of the Council, be nearer than the prescribed distance from the centre of the roadway.

Sub-section 2 empowers the Council, after consulting the local authority, to require a greater distance than 20 ft., but not exceeding 30 ft. from centre of roadway.

Sub-section 3 gives liberty of appeal to the Tribunal of Appeal against the determination of the Council.

Sub-section 5 provides that where any person intends to alter or re-erect a building existing at the commencement of the Act or seven years previously, which may not be in conformity with the provisions of this section, he may cause plans to be prepared showing the extent and height of such building in its several parts, and the extent of the forecourt, to be certified as correct by the District Surveyor. Thereupon it shall be lawful for such person to alter or re-erect such building; but so that no land within the prescribed distance shall be occupied by the building or forecourt except that previously so occupied, and that the altered or re-erected building shall be in no part of a greater height than the height hereinafter prescribed (*which has now been settled at* 80 *ft.*).

Failure to submit such plans, or if the District Surveyor or the Tribunal of Appeal shall decline to certify their accuracy, bring the site and building within the preceding provisions of the section.

No dwelling house to be inhabited or adapted to be inhabited by persons of the working class shall, without the consent of the Council, be erected or re-erected within the prescribed distance, and no building shall be converted into such dwelling-house within the prescribed distance.

Clause 10.—*As to Compensation in Certain Cases.*

Where in the cases of the formation or laying out of a street over land which at the commencement of the Act or seven years previously has been occupied by buildings, or in the case of the adaptation for carriage traffic of any street or way not previously so adapted or used, the Council shall require a greater width than 40 ft., or that the prescribed distance shall exceed 20 ft. The Council shall be liable to pay the owner compensation for the loss or injury (if any) sustained by him by such requirement. The amount, if not agreed, to be settled by arbitration according to the provisions of the Lands Clauses Act.

Clause 13 requires that copies of the printed regulations of the Council relating to this part of the act shall be kept at the principal office and supplied at all reasonable times without charge to any applicants for them.

Clause 14.—*Appeal.*

Any applicant for sanction to the formation and laying out for adaptation of a street or for the certificate of a District Surveyor who may be dissatisfied with the refusal or conditional grant of such sanction or with any condition imposed by the Council or with the refusal of such certificate may appeal to the Tribunal of Appeal.

PART II.—LINES OF BUILDING FRONTAGE.

Clause 17 provides that no building shall, without the consent of the Council, be erected beyond the general line of buildings to be defined by a certificate of the superintending architect.

Clause 18 empowers the Council to set back any building projecting beyond the general line of buildings which may have been taken down, to an extent exceeding one-half of its cubical extent, or otherwise demolished, to such line as they may direct, subject to payment of compensation, which if not agreed is to be determined by arbitration, according to the Lands Clauses Acts.

Clause 20 provides for appeals to the Tribunal of Appeal against the certificate of the superintending architect.

PART IV.—SPACES AT REAR OF BUILDINGS. SPACES ABOUT BUILDINGS NOT FRONTING ON STREETS. HEIGHT OF BUILDINGS.

Clause 32.—*Space at Rear of Dwelling-houses in New Streets.*

Enacts that with respect to domestic buildings erected after the commencement of the Act, and abutting on a street formed or laid out after the commencement of the Act, there shall be provided in the rear of such building an open space exclusively belonging thereto, of an aggregate extent of not less than 150 square ft.

In certain specified and exceptional cases such open space may be provided wholly or in part above the level of the ceiling of the ground-floor story.

In all other cases the open space shall be free from any erection above the level of the adjoining pavement except a water-closet, &c., not exceeding 9 ft. high.

Such open space shall extend the entire width of such building and to a depth in every part of at least 10 ft. from such building.

The height of any such building in relation to the space required in the rear thereof shall be determined by a diagonal line drawn from the boundary of the space furthest removed from the roadway in front at the level of the pavement of such roadway at 63½ degs. as the limiting angle, above which line no part of the building except only chimnies, dormers, &c., shall extend. When the land at the rear of such building abuts immediately on a street, the diagonal line or limiting angle may be drawn from the further side of such street at the level of the pavement thereof, and the open space may be provided on any part of the land.

In the case of corner sites the Council may, subject to certain provisions, permit the erection of buildings not exceeding 30 ft. in height upon such part of the space in the rear as they may think fit.

With respect to domestic buildings erected after the commencement of the Act abutting on a street formed or laid out before the commencement of the Act the provisions of the section are to apply with the modification that the diagonal line or limiting angle of 63½ degs. shall start from the level of the ceiling of the ground-floor story instead of the level of the pavement in front.

Clause 34 gives to the Council power of control over the plans for dwelling-houses to be inhabited or adapted to be inhabited by persons

of the working classes erected after the commencement of the Act not abutting on a street, with liberty of appeal from the refusal of the Council to sanction the plans or against any of the conditions prescribed by the Council to the tribunal of appeal.

Clause 38.—*Saving for Certain Domestic Buildings on Old Sites.*

The clause would appear to apply to every case of rebuilding throughout existing London, and provides that when any person intends to erect a domestic building (not a dwelling-house to be inhabited by persons of the working class) abutting upon a street, on the site of a domestic building existing at the commencement of the Act, or on a site then vacant, but which has been occupied by a domestic building at any time within seven years previously:

It shall be lawful for such person before commencing to erect the intended domestic building to cause to be prepared plans showing the extent and height of the previously existing building in its several parts, and may cause such plans to be submitted to the District Surveyor, who, if reasonably satisfied of their accuracy, shall certify the same under his hand.

Such person may then erect the intended domestic building, but so that no land shall be occupied by the newly-erected building except that which was occupied by the previously existing domestic building as so certified, and that such newly-erected building shall be in no part of a greater height than the height hereinafter prescribed.

If such person should fail to submit such plans to the District Surveyor, or the District Surveyor, or the Council, or the Tribunal of Appeal decline to certify the accuracy of the same, he shall, in rebuilding, be bound by the preceding provisions of this part of the Act relating to domestic buildings abutting upon a street formed or laid out before the commencement of the Act.

If a deviation is desired in any respect from the plans certified by the District Surveyor, the Council shall sanction such deviations, on such conditions as they may think fit, provided such conditions do not in any case exceed the conditions prescribed for new dwelling-houses abutting on a street formed or laid out before the commencement of the Act.

In the case of new streets over old sites, or the widening of existing streets, the Council to have certain dispensing powers.

A person dissatisfied with any decision of a District Surveyor under this section may appeal to the Council, who may make such order as they may think fit, and any person dissatisfied with any such order may appeal to the Tribunal of Appeal.

Clause 42, in terms similar to the existing law, limits the height of buildings to 80 ft., which thus becomes the prescribed height before referred to.

Clause 43 enacts that after the commencement of the Act no existing building on the side of a street formed or laid out after the 7th day of August, 1862, and of a less width than 50 ft., shall, without the consent of the Council, be raised, and no new building shall, without the consent of the Council, be erected abutting on any such street so that the height of such building shall exceed the distance of the front or nearest external wall of such building from the opposite side of such street.

The Tribunal of Appeal, by which almost every contested question arising under the Act is to be decided, is to be constituted as follows, by three members:—One appointed by a Secretary of State, one by the Council of the Royal Institute of British Architects, one by the Council of the Surveyors' Institution. Thirteen clauses (163–175) are devoted to the constitution and procedure of the Tribunal.

The consolidation of the existing law in one enactment will be a great public advantage, and in many particulars the experience of its working has led to the introduction of advantageous amendments:

But probably the renewed consideration which Parts I. and IV. will receive in the House of Lords may lead to further amendments therein.

July 9, 1894. A. C.

NOTE.—When the Bill is again reprinted, the numbering of the clauses above given will probably be altered.

OLD HOUSES, POUNDS BRIDGE.

THIS view of a group of half-timbered houses at Pounds Bridge, near Penshurst, is from a sketch by Mr. E. B. Lamb.

MAGAZINES AND REVIEWS.*

THE *Art Journal* is an interesting and varied number, though we do not know exactly what Mr. Gosse is driving at in his articles on "The New Sculpture," or what school of sculpture he precisely means to define. Mr. Gosse used, we believe, to declare that Mr. Tinworth was the greatest genius in sculpture of the day, a critical opinion which hardly inclines one to feel much confidence in his judgment. An unsigned article is devoted to a defence of "South Kensington and its Expenditure on Art." Mr. G. A. T. Middleton writes a short article on "Architecture at the Royal Academy," and Mr. R. A. M. Stevenson one on the Royal Academy generally. M. Duret contributes an article, very fully illustrated, on "Degas and his Works." An illustrated article on "The Work of Birmingham Silversmiths," by Mr. O'Fallon, gives hope that Birmingham work is looking up in style.

In the *Magazine of Art* the question of the opening out of Westwinster Abbey is considered, and the effect on the building, with the conclusion that in any case the projected new chapel could never appear as part of the Abbey, and burial in it would not be accepted as burial in the Abbey. So we believe; then why build it? The *Magazine* prints a paper read by Mr. Brett before the Art Workers' Guild, in ridicule of Raphael's cartoons, a paper not creditable as a whole to the writer of it, though there are no doubt some truths in it. People bow down before the cartoons in this country in the same unreflecting way that they bow down before Handel; nevertheless, the

* The object of these notes is to point out anything in the contents of the current magazines which is of special interest to our readers, with occasional brief criticisms on the views expressed in such articles. When a magazine which has been sent to us is not noticed, it is because that number contains nothing that it is within our province to comment upon.

modern criticism will not obliterate Handel, and we do not think Mr. Brett will obliterate Raphael. The editor contributes a rather amusing sketch of "The Artist's Ghost: a Study in Evolution."

The *Studio* gets rather too scrappy in literary form, but is full of good illustrations of various kinds. For an article on Helleu's etchings the editor has been fortunate enough to get reproductions of some of that remarkable artist's work. Mr. E. F. Strange has a well-illustrated article on "Stencilling as an Art"; Mr. G. Frampton's article on "Colouring Sculpture" concludes with the rather doubtful suggestion that coloured bas-relief is an opportunity for the man who has not that totality of gifts which would make him exclusively painter or sculptor.

The *Fortnightly* contains an article by Mr. Claude Phillips on "Fair Women at the Grafton Gallery," in which a good many doubtful authenticities and doubtful nomenclatures are dismissed with costs.

In the *Nineteenth Century* Sir F. Burton deals with the new evidence as to the authenticity of the Leonardo da Vinci picture known as the "Virgin of the Rocks," and now in the National Gallery. He considers the authenticity of the picture to be now thoroughly established, and deals pretty sharply with some foreign critics who have maintained the opposite view. In the same magazine Mrs. Sidney Webb writes a somewhat angry article on "The failure of the Labour Commission," a failure which seems chiefly to consist in the fact that the commission has not deduced results favourable to Mrs. Webb's own social theories.

The Century contains no less than three of those topographical articles to which American magazines are so partial; "Coasting by Sorrento and Amalfi," by Mr. Marion Crawford, "The high road from Salerno to Sorrento," by Mr. J. H. Adams (both with illustrations by Mr. Harry Fenn), and "Across Asia on a Bicycle," Part III. The same number contains also "The evolution of a battle ship," a practical description of the construction of a man of war, by Mr. A. F. Matthews, and an article by Mr. Albert Shaw on "What German Cities do for their Citizens," an analysis of the municipal work of a German town. Among more directly artistic subjects is an article on Ruisdael, by Mr. Timothy Cole, one of the series on old Dutch masters; another on the "Fliegendeblätter," with illustrations from that rather overated journal; and an article on "Painting at the Fair," by Mr. J. C. Van Dyke, a last talk (one hopes) about that eternal Chicago Exhibition, which nowever contains some good critical thoughts about the state of contemporary painting; and if the writer hopes great things from the future of American art, he is not blind to the fact that at the present moment all that is good in that art is but a replica of Paris or Munich. It is something to find an American critic admitting that.

Scribner contains an article, illustrated by plans, on "The New York Tenement House Evil and its Cure," by Mr. Ernest Flagg, according to whom "the greatest evil that ever befell New York was the division of the blocks into lots of 25 by 100 ft.," which apparently has led to the repetition of a stereotyped form of plan that has little to recommend it. The difficulty has arisen, says Mr. Flagg, "owing entirely to our lack of knowledge of the art of scientific planning." Certainly the device of living-rooms opening on to an often very narrow central well does not look promising for sanitary conditions. The principal remedy the writer considers to lie in official regulations for space at the side of and between such buildings, whereby they may not be compelled to obtain their light and air from central shafts. "The French in Holland," by Mr. Hamerton, is really an article on François Flameng, apropos of an engraving from his picture under that title.

The *English Illustrated* contains an article on "Lincoln's Inn Fields, Past and Present," by Mr. Robert Hunter, with illustrations by Mr. Holland Tringham, and one on "Tapestry," with illustrations from photographs, by Mr. Alan Cole, which, as may be expected, is a useful article both in the practical and artistic sense, though the writer must be surprised at the company he finds himself in. The illustrations to one or two articles, "Reminiscences of Childhood," for instance, are of a sheer vulgarity which is a disgrace to the magazine which publishes them.

In the *Gentleman's Magazine* Mr. N. Wynn Williams writes a short article on the Catacombs of Paris, giving an account of a visit to them. A short story called "The Artists," translated from the Russian, is a striking literary commentary on some aspects of modern art.

Harper includes an article on "The United States Gun Factory," by Commander Jewell, U.S.N., with illustrations of some of the processes of manufacture. A short article on "The storage battery of the air," by Mr. A. McAdie, contains an account of some experimental observations on thunderstorms and their effect on the condition of the atmosphere, carried on some years ago from the top of the Washington Monument.

In the *New Review* M. Chérêt, Mr. Dudly Hardy, and Mr. Aubrey Beardsley, write a kind of triple article on "The Art of the Hoarding." Of the contribution of the latter of the three, the less said the better; and if Mr. Hardy dignifies by the name of art such productions as the poster of the "Gaiety Girl," and some other impossible travesties of female figures which accompany his remarks, it is to be hoped he will find few to agree with him. M. Chérêt makes less pretence at being serious, with more *verve* and originality, though he by no means escapes vulgarity. His remarks on the importance of the design of the lettering in an advertisement are to the point. In an article on "Municipalities at Work," Mr. F. Dolman gives some account of the work of improvement in Birmingham of late years, and as the article is numbered "I." we presume similar articles on other cities are to follow.

In the *Atlantic Monthly* "The City on the Housetops" is a curious sketch of life as seen from the attic windows of an American city. "The Home of Glooscap" (whatever that latter word may stand for) is a picturesque article by Mr. F. Bolles on the landscape and incidents of scenery and life on apparently a wild part of the American coast facing Newfoundland.

In *Macmillan's Magazine* Mrs. Steel, the author of some of the best Anglo-Indian stories written of late, has a short sketch "A Bit of Land," pourtraying with a great deal of quiet humour the difficulties of a native village surveyor in producing an accurate map of the holdings in connexion with his village, by a system of chaining the lots separately and piecing them together on the map. For the result we refer the reader to the story.

In the *Contemporary Review*, Professor Bonney asks the question, "Do glaciers excavate?" and answers it in the negative, in opposition to the views of Professor Wallace. Not that Professor Bonney altogether denies the erosive action of glaciers, but maintains that it has been much exaggerated, and that effects have been attributed to it of which it is incapable. Mr. Phil Robinson, in the same magazine, writes a very pleasant and picturesque article on "Hampstead Heath," and Mr. A. D. Provand, M.P., treats of "Employers' Liability" in the popular strain of favour to the artisan. He observes, for example, that on the Forth Bridge the proportion of accidents to the number of men employed was very high, although the wages were not much above the average; but has he taken any steps to ascertain how many of these accidents were due to recklessness, carelessness, or drunkenness? No doubt undertakings like the Forth Bridge and the Manchester Canal (which is another example cited) leave much greater chances to workmen to kill and injure themselves, through sheer carelessness, than occur in ordinary life; but how many of these accidents are there which are not really preventible—accidents which never need have or ought to have happened, had proper caution been exercised by the men? We must have a statistical answer to that question before we can estimate the significance of this kind of evidence.

In *Blackwood* "Six Weeks in Java," by Colonel Collett, gives an interesting description of the country.

The *Antiquary* and the *Reliquary* contain the usual amount of matters of archæological interest, without inviting any special comment.

MIDDLESBRO' BUILDING LINE CASE.—At the Middlesbrough Police Court, on the 4th inst., Mr. C. J. Coleman, Stipendiary Magistrate, gave his decision in the case of the Corporation of Middlesbrough against J. S. Scott, builder. Defendant, after written notice from the Corporation, allowed a wooden building in Linthorpe-road to remain beyond the front main wall of the house on the south side, and the Corporation now sought for the enforcement of the penalty against defendant—The Stipendiary said he had decided to convict defendant, and ordered him to pay 10s. per day from the 18th to the 25th June, and also pay the costs.—Mr. Parrington asked that execution might be stayed in order to give an opportunity of appeal.—Mr. Bainbridge, Town Clerk, said plenty of time would be given Mr. Scott if he wished to appeal.

COMPETITIONS.

BOARD-ROOM, &c., KIRKHAM.—The competition for Board-room, Union offices, and receiving wards, to be erected near the Union Workhouse at Kirkham, has just been decided. The 1st premiated design is by Messrs. Heywood & Harrison, Commercial Chambers, Accrington; 2nd, Messrs. Weaver & Rowbotham, Guildhall-street, Preston; 3rd, Mr. E. J. Andrew, Lime-street, Preston.

LAYING OUT GROUND, BRISTOL. — The competition for laying out the ground between St. Augustine Bridge and the stone bridge, Bristol, as an open space, has resulted as follows:—1st premiated design, Messrs. W. J. Taylor and H. J. Weston, Assoc. M. Inst. C.E., 24, Portland-street, Southampton. 2nd, Mr. Edward Stochley Sinnott, Assoc. M. Inst. C.E., Bristol. 3rd, Mr. Thomas H. Mawson, (garden architect), Windermere and Market Drayton.

SCHOOL, SOUTHEND-ON-SEA.—The Southend School Board having decided to build another school situate on the Leigh-road, invitations were issued to architects practising within the borough for designs in competition. Mr. F. W. Roper, A.R.I.B.A., was engaged to advise the Board upon the plans and specifications. As the result of Mr. Roper's report, it was decided to adopt the designs submitted by "Knowledge," subject to any modifications required by the Board. The author of these plans is Mr. W. Yendall Hobbiss, architect, of Southend-on-Sea. There were four other competitors.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring Gardens, Sir John Hutton, Chairman, presiding.

Electric Light Installation for the Embankment, &c.—In a report by the Highways Committee on the electric light installation for the Victoria Embankment and Westminster and Waterloo Bridges, it was stated that it was desirable that the supply of machinery and plant should be the subject of two separate contracts, and that, having regard to the scheme of the electric light installation being completed and in operation before the end of the year, tenders should be invited without any avoidable delay, and they recommended accordingly.

This was agreed to.

Mr. Roberts moved—"That in the opinion of the Council designs should be obtained for the electric lamp standards to be erected on the Victoria-embankment; and that it be referred to the Highways Committee to take the necessary measures for the purpose, and to advise the Council what premium should be offered for the best design."—He thought that if they advertised they would have some of the best artists in the country competing, and that the President of the Royal Academy might be ask to adjudicate. By that means he thought they would get a design worthy of London.

Mr. Powell seconded the motion, which was carried.

Shaftesbury Memorial Fountain.—The Improvements Committee reported that, as instructed by the Council, they had experimented in connexion with the supply of water for the Shaftesbury Memorial Fountain. The experiments had clearly proved to them that even under most favourable circumstances the site at Piccadilly-circus was not a suitable one for any large spouting fountain, and they felt that, without stopping the water supply entirely, the only way to prevent the Shaftesbury fountain from becoming a nuisance was to arrange for the water to flow from the lower portion only. By adopting that course the memorial would still be a fountain not merely in name but in reality, and, as drinking-cups were provided, they believed that the fountain would prove to be a considerable boon to the public, especially during the hot weather. They recommended—"That, subject to an estimate being submitted to the Council by the Finance Committee as required by the Statute, arrangements be made for the working of the Shaftesbury Memorial Fountain for an average of ten hours a day." The Committee further recommended that the block of stone bearing an inscription to Lord Shaftesbury be removed, and that the offer of Messrs. Broad & Son to cast an inscription in bronze slips and to place it upon the faces of the fountain on the large chamfer immediately above the lower basin be accepted.

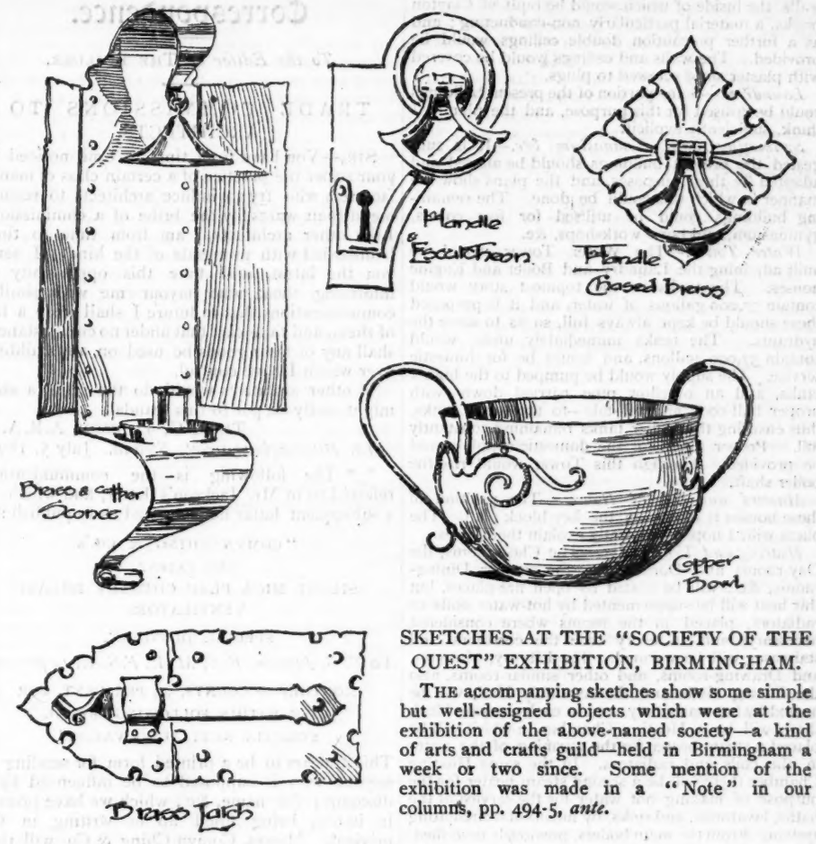
Mr. Campbell moved that the recommendation be referred back. This was seconded by Mr.

Jones; but, upon a vote being taken, was lost, and the recommendation was agreed to.

The Council adjourned soon after seven o'clock.

A CEREMONIAL KEY.

THE key illustrated is that with which the Princess of Wales opened the Home for Incurables at Streatham a few days ago. It was specially designed by Mr. F. Stuart Murray, architect, and though simple, it is a better design than many more pretentious keys that we have seen produced for such occasions; the handle affords a good hold for the hand, and there is none of that aimless imitation of architectural forms which we too often meet with—the shank of the key taking the form of a column, &c. The key was made by Messrs. Jas. Hill & Co.



SKETCHES AT THE "SOCIETY OF THE QUEST" EXHIBITION, BIRMINGHAM.

THE accompanying sketches show some simple but well-designed objects which were at the exhibition of the above-named society—a kind of arts and crafts guild—held in Birmingham a week or two since. Some mention of the exhibition was made in a "Note" in our columns, pp. 494-5, *ante*.

Illustrations.

CHRIST'S HOSPITAL SCHOOLS COMPETITION. DESIGN BY MR. T. E. COLLCUTT.

WE have already illustrated the selected design for Christ's Hospital Schools; in illustrating the others, with the exception of that by Mr. Jackson (who, as already mentioned, does not wish his design to be published), we have considered that the only way to render them useful and to do justice to their authors is to devote the illustrations in one issue entirely to one design, so as to give a general idea of it, and enable our readers to study it as a whole conception. We devote this number accordingly to Mr. Collcutt's design, and will devote other future numbers to those of Mr. Ingelow and Messrs. Paley & Austin respectively.

The general aim kept in view in Mr. Collcutt's design will be best explained by the following quotations from his report sent in with the drawings:—

"After careful consideration of the requirements contained in your instructions, I am of opinion that for the convenient working of so large a school it is most desirable that the various buildings be compactly arranged as one large whole; at the same time the importance of a perfectly free circulation of air and ample light should be very carefully considered.

By a judicious concentration of plan the labour of supervision, the general work of the school, and the necessary daily cleaning of rooms, &c., could be more conveniently and economically carried out than would be possible were the buildings scattered over a large area.

It will be seen by the block plan that the whole of the accommodation required (with the exception of the Infirmary and the Sanatorium) is devised to secure these objects, while the additional result is obtained of minimising the initial cost and maintenance of such matters as drainage, roads, fencing, and piping for water supply, heating, and electric lighting.

The general scheme of the arrangement of the buildings allows of easy inter-communication, and of ready and economical distribution of coals and other articles of daily consumption to the various houses.

The Schools.—These buildings occupy a central position in the general scheme, of which the Assembly Hall forms the prominent feature. The Hall is circular on plan, with the floor, like that of the pit in a theatre, inclining upwards from the platform, this being not only an advantage but a necessity, if the audience and those on the platform are to have a clear view of each other. The superior acoustic properties of a circular form of room are acknowledged, and in no other can the audience be so conveniently and advantageously seated. The Hall is surrounded by a very ample corridor, and has sufficient entrances for the rapid and easy assembling and dispersing of the boys. The Class-rooms, arranged round the corridors of the Hall, and having a northern aspect, are planned so that the window light may be on the left hand of the student. Urinals are provided in connexion with the schools; these are not demanded by the Instructions, and, of course, may be omitted should they not be required.

Science Schools.—These Schools also have a northern aspect, and the Laboratories have ample sky and wall light.

Drawing Schools.—Above the Science Schools are placed the Drawing Schools, with a northern aspect and top light. The grouping of the whole of the school buildings has been arranged so as to be readily accessible from the boys' houses, an obvious advantage in inclement weather. It has not been thought necessary to provide cloisters or covered ways between the various buildings, the great cost of so doing being a sufficient reason for the omission of the luxury of sheltered approaches. Cloisters would, perhaps, be convenient as playing grounds during the occasional breaks in the school hours, but simple covered sheds could be easily erected on the space between the houses and the schools to serve this purpose.

Library and Museum Building.—On the ground floor of the main entrance are rooms for the Governors, the Court-room, and the Clerk's and Visitors' rooms, besides a Reception-room for the Head Master. The Library and Museum, having top lights and approached by two staircases, are on the first floor.

Dining Hall, Kitchen, &c.—The Dining Hall forms one side of the large quadrangle, and is conveniently situated for easy and rapid service from the Kitchen. A Gallery is provided at the east end for the accommodation of visitors. The Kitchens and Servants' apartments, though in direct communication with the Dining Hall, are sufficiently disconnected from the school buildings.

The Chapel will seat one thousand persons. With a view to economising space, a Gallery has been designed for the use of visitors, the families of the masters, and for the domestic staff.

The Houses.—With regard to the request that alternative plans, showing a 'vertical' and 'flat' system of blocks of houses, should be submitted, after a very careful study and planning of the accommodation required, I think it will be found that there is practically only the difference of name to be obtained. The Instructions suggest that in a block of two or three houses one Matron will be sufficient; it is obvious, therefore, that the houses cannot be distinctly separated by party walls or otherwise, if the Matron and her servants are to obtain easy access from one house to another. In the plan numbered 19, showing a block of three houses, two of them are arranged on the 'flat' system, while the third house is on the 'vertical' system. The plan numbered 25, showing a block of two houses, is arranged on the 'vertical' system, but it is apparent that by an opening in the party wall, the same plan would be available for the 'flat' system; the plan numbered 29 is so shown, and this has the advantage of occupying less space than the former plan. In plan No. 19 the Dormitories are circular, and are easily overlooked, both by the Master and the Prefect; this form of room has the advantage of obtaining sunshine during some portion of the day; but if the circular form for so large a dormitory be objected to, the alternative of a square plan can be easily arranged. The lavatories are in easy access of the Dormitories, and are protected from draught in the approach, while the natural ventilation is as complete as possible, windows being placed on either side of the room. The water-closets and urinals are quite secured from being objectionable by the short corridor with cross ventilation. The Masters' rooms are well placed for supervision; at the same time they are sufficiently private. The Day-rooms, Changing-rooms, &c., are, I believe, of ample size, and are easily reached from the entrance. The Married Master's house is placed so that it is not overlooked by the rooms occupied by the boys; at the same time, his study, bedroom, &c., are contiguous to the boys' rooms, and are convenient for efficient and frequent inspection of the houses. The Matron and servants are accommodated on the second floor of the Masters' house, but not communicating with it. Sufficient housemaids' closets, wardrobe and linen rooms are provided.

Infirmary and Sanatorium.—The planning of these buildings has received very careful attention and study, and I hope it will be found that not only has the required accommodation been provided, but that it is constructed on the latest systems, and that isolation, ventilation, and light have been sufficiently considered. . . . In both the Infirmary and Sanatorium, the windows are constructed on the sash system, with an upper part to open inwards for ventilation, the current of fresh air being directed towards the ceiling by means of a glazed hopper, as shown on the detail drawing; the lower sashes can also be opened to admit air by the meeting bars, this also being an upward current. The window-blind could be fixed to the top of the hopper, and made to pull down over the half-roller shown, so that the free admission of air, or the direction of the current, would not be affected by the closing of the blind. . . .

Latrines.—These are provided in close proximity to the houses, and are arranged with a central passage for the convenient removal earth-closet trays.

Preparatory School.—These buildings are quite distinct from the main schools; at the same time they form a portion of the group, and must, of course, be within a convenient distance of the Dining Hall, which is served from the general Kitchen.

Music House.—Great attention has been paid to the proper isolation of the various practising rooms in order to prevent the sound travelling from one room to another. These rooms would have hollow

walls, the inside of which would be built of Clayton bricks, a material particularly non-conducting; and as a further precaution double ceilings would be provided. The walls and ceilings would be covered with plaster slabs screwed to plugs.

Laundries.—Some portion of the present buildings could be utilised for this purpose, and the plan is, I think, sufficiently explicit.

Swimming Baths, Gymnasium, &c.—It is suggested the present buildings should be altered and adapted for these purposes, and the plans show the manner in which this could be done. The remaining buildings could be utilised for five courts, gymnasium, and boys' workshops, &c.

Water Tower.—The Water Tower would be built adjoining the Laundry and Boiler and Engine houses. The tanks in the topmost story would contain 37,000 gallons of water, and it is proposed these should be kept always full, so as to serve the hydrants. The tanks immediately under would contain 37,000 gallons, and would be for domestic service. The supply would be pumped to the higher tanks, and an overflow pipe carried down—with proper ball-cock and tell-tale—to the lower tanks, thus ensuring the higher tanks remaining constantly full. Proper filters for the domestic supply would be provided. Through this Tower would rise the boiler shaft.

Masters' and Officers' Houses.—The position of these houses is shown on the key block plan. The plans will, I hope, sufficiently explain themselves.

Heating and Ventilation.—The Class-rooms, the Day-rooms and Dormitories, the smaller Dining-rooms, &c., will be heated by open fire-places, but this heat will be supplemented by hot-water coils or radiators, placed in the rooms where considered necessary, and in every case the corridors and staircases will be warmed. The Library, Museum, and Drawing-rooms, and other similar rooms, also the Dining Halls and the Assembly Hall, will be heated by hot water only, and in each separate block there will be a Heating Chamber in which will be placed a steam heater for the warming of the water in the coils and radiators. In the same Heating Chamber there will be a second steam heater for the purpose of making hot water for the service of the baths, lavatories, and sinks, by means of a circulating system. From the main boilers, previously described, a steam main will be taken, by means of a properly-constructed duct large enough for workmen to pass along, to the different buildings as required, with branches connected to each separate heater, the condensed water being taken, through the duct, back to the main boilers for re-use. The Ventilation will generally be as described for the Infirmary and Sanatorium. . . .

Mode of Construction, &c.—It is proposed that the whole of the buildings, excepting the Masters' and Officers' private houses, be constructed with fire-proof floors, corridors, staircases, and ceilings immediately under the roofs. The Floors would have rolled iron or steel joists, with concrete arching; the floors being laid with wood blocks or finished with granitic paving or mosaic. The Ceilings to the dormitories would be formed by the intrados of the floor arch, but the Ceilings of Class-rooms, wards, and other rooms, would have wood ceiling joists and plaster, as shown on the detail drawing of the Infirmary section. The Masters' houses, in connexion with the residential houses, would also be fireproof. The desire to render all the buildings as secure as possible from damage by fire, has led me to design the Dining Hall and the Chapel with vaulted fireproof ceilings; this would, no doubt, add somewhat to the cost, but a simple arrangement of vaulting would be more effective than would a simple arrangement of open timber roof. These vaults would be constructed of stone and brick arching with concrete filling, and, of course, would be very much more lasting than any other form of roof. The Walls would be built of brick, with red brick facings and stone dressings; the roofs would be covered with green Westmoreland slates laid on boarding; the Joiners' work would be of oak, the first cost of which would be considerably greater than if of deal, but the expense of constantly painting would be saved. The Staircases would be of Yorkshire stone, especial care being taken to ensure the safety of the boys by sufficiently guarded handrails and balusters. They are mostly about 4 ft. 6 in. wide, any greater width rather adding to the danger of quickly descending. Glazed Bricks would form the dado to the dormitories and to the wards, and the whole of the closets, &c., would also have glazed brick facings. The Plastering generally would be Selenitic, but in the hospitals it should be fire-proof granite plaster. Generally, I have considered that the whole of the buildings should be constructed with the best materials of their respective kinds."

THE EAST-END DWELLINGS COMPANY.—The directors have declared interim dividends for the half-year ending June 30 last, at the rate of 4*l.* per cent. per annum on the preference shares, and at the rate of 5*l.* per cent. per annum on the ordinary shares. Satisfactory progress is being made with the new buildings near Stepney-green, which have been named "Cressy Houses," and it is expected that they will be ready for occupation during the autumn of the present year. Building operations will probably be commenced on the new King's Cross site in the course of the next three months.

Correspondence.

To the Editor of THE BUILDER.

TRADE COMMISSIONS TO ARCHITECTS.

SIR,—You have from time to time noticed in your paper the practice of a certain class of manufacturers who try to induce architects to recommend their wares by the bribe of a commission. Like other architects, I am from time to time bombarded with proposals of the kind. I send you the latest, and take this opportunity of informing those who favour me with similar communications that in future I shall keep a list of them, and take care that under no circumstances shall any of their goods be used on any building over which I have control.

If other architects would do the same a stop might easily be put to this scandal.

THOS. G. JACKSON, A.R.A.

14, Buckingham-street, Strand. July 5, 1894.

*** The following is the communication referred to in Mr. Jackson's letter, and which in a subsequent letter he has asked us to publish:—

"COMYN CHING & CO.'S

NEW PATENT

SILENT MICA FLAP CHIMNEY BREAST VENTILATOR.

SPECIAL DISCOUNT.

To *T. G. Jackson, Esq., M.A., F.S.A., 15 per cent.*

MONTHLY ACCOUNTS, 2½ PER CENT. FOR CASH WITHIN FOLLOWING MONTH.

STRICTLY NETT AFTERWARDS."

This appears to be a printed form for sending to anyone who is supposed to be influenced by a discount; the name, &c., which we have printed in italics, being filled up in writing in the original. Messrs. Comyn Ching & Co. will thus see that by the issue of this preposterous piece of paper they have lost the patronage of a leading architect. Perhaps the publication of it may act as a deterrent to others.—ED.

SEWER AND DRAIN VENTILATION.

SIR,—Mr. Buchan's sweeping assertion in the first par. of his letter, if true, would condemn as a bungler the engineer of every town where any difficulty has arisen with regard to sewer ventilation, and it is a notorious fact that very few have escaped this difficulty.

The members of my own profession are not free agents, inasmuch as Mr. Buchan's patent rat-trap obstruction has been legalised. This was done in the first instance on the advice of medical men, that the house should be isolated from sewer and drain-gas—very good advice—but the method of carrying it into effect by means of the interceptor trap is bad. The unpopularity of an argument is no proof whatever that it is wrong.

The fact that between twelve midnight and 6 a.m. there is less sewage and more air space in the sewer, does not mean that "an extra amount of sewer-gas is generated," as stated by Mr. Buchan, but, on the contrary, the sewage then consists chiefly of water wasting through rubbishy water fittings, and bad plumbing, and the sewer-air is in its most diluted condition, while the drain-air is being poisoned by the emanations from the 3 gals. of stagnant sewage, containing 35 per cent. of solid matter, retained in the interceptors.

I did not refer to the water-flow as "the chief agent in sewer ventilation," but, on the contrary, I agree so far with Mr. Santo Crimp that the wind is the chief agent in *producing* motion in the sewer air, but the direction of that motion is decided not by the wind, but by the water-flow as the "most permanent factor" inducing the air to follow it down the sewer. My letter is perfectly clear on this point, although Mr. Buchan may not be able to appreciate the difference between his statement and mine.

It is not an uncommon occurrence for the drain outlets to be covered by the water flowing down the sewer, but it is of short duration, and the air which has been forced through the interceptor is replaced by fresh air when the water in the sewer falls to its normal level.

Mr. Buchan affects to believe that my expression, "a good 'wash-down' pan and trap closet," means an old "pan-closet" or "pan and container" closet, this may be intended for a joke, but if so, it is too absurd, it is Mr. Buchan who has got them "mixed," not I.

Mr. Buchan has left my facts and arguments severely alone and unanswered, but as usual has gone off on a voyage of discovery amongst side issues and irrelevant matter.

R. READ,
City Surveyor, Gloucester.

July 10, 1893.

SIR,—My attention has only just been drawn to the discussion which has been going on in your columns on sewer ventilation. As it is a question in which I have taken much interest for some years, I should, with your permission, like to say a few words in support of the abolition of the so-called interceptor. From my own experience, I can quite agree with Mr. Read, that these interceptors are a nuisance, and are in my opinion the weakest point in a house drain. I have generally found that if the drain does get choaked, it is usually at the trap or interceptor. If we look the matter clearly in the face, how can we expect otherwise? In the majority of cases we have only a two-gallon flush, and again by introducing the interceptor the velocity must, to a certain extent, be broken and destroyed. For some time past I have in my own practice, in districts where I am not fettered by by-laws regarding interceptors, done away with them altogether, and made the soil pipes act as up-cast shafts, and placed air inlets over the crown of the sewer in the street in suitable positions—or in other words, made the soil-pipes act as main sewer ventilators. The object is to make the street openings act as air inlets, and the pipe shafts as outlets. But I have found this cannot always be relied on, except in certain situations. A great deal depends upon the temperature over the street grating and the temperature in the sewer and drain, and also the force and direction of the wind. The latter I have found to have a very material effect. As an instance, I may state that some time since I had occasion to test some house drains, and I found that when the sun was shining full over the street grating, and the pipe shaft in the shade, and the smoke test applied to the drain, the smoke came up through the street opening, and *vice versâ* when the sun was in the opposite direction. I do not think myself that there will ever be success with surface ventilation only. What is wanted is a good supply of fresh air, and the more that can be got into a sewer the better. The question is, what is the best system to adopt?

If we still use the interceptors, it is quite evident that some means of keeping them clean and open must be employed, and this can only be done by having automatic flushing-syphons at the head of the house-drain. I have recently fixed one of Adam's automatic flushing-syphons, worked with clean water, at the head of a system of house-drains to a large building.

Here I have been compelled to use the interceptor; the by-laws are against me; I saw what the consequence would be if I relied upon keeping the trap open with simply the ordinary flush and waste. A good system of flushing with clean water will do much towards assisting in ventilating if ample means are provided at suitable points for ventilating by means of up-cast shafts. Whether sewers or drains are well constructed or not, it is quite impossible to get a truly self-cleansing sewer. Gases due to fermentation must be present, for the reason that the portion of the sewer which is alternately wet and dry becomes more or less coated with fæcal matter and grease, which must be removed by flushing with clean water only. I certainly see no reason why soil-pipes should not be utilised for ventilation of the main sewers. This could be done without interfering with the interceptor, or hurting the feelings of those who are so much attached to them.

To bear out my statement as to the interceptor, I may say that the system carried out by Mr. Waring in the town of Memphis, U.S.A., entirely agrees with those holding the same views as myself. Here 6-in. sewers were used in all side streets, and 9-in. mains, and I believe I am correct in saying that only 4-in. pipes for house connexions. No traps or interceptors are used on the house drains, but he simply made the soil-pipes act as main sewer ventilators. Air inlets were placed in suitable positions, and in this manner, I understand, very good ventilation was got.

I cannot say that I agree with the 4-in. house connexions. I consider 6 in. is the smallest diameter of pipe that should be used.

CIVIL ENGINEER.

SIR,—If sewers and drains have not been sufficiently ventilated in your columns, I should be glad, thus late in the field, to add one word against a hasty condemnation of disconnectors, which I have always found to serve their purpose well, if properly made, fixed, and flushed out daily from an automatic flushing tank.

I fear that so many evils would follow the adoption of this simple method of solving the sewer ventilation question that the remedy would be found worse than the disease.

The evils which I anticipate would be mainly caused by the removal of the inlet ventilator to the house drain, which would be necessary to make the air from the sewer to pass up the outlet ventilator of the house drain.

The first evil would be the substitution of foul sewer air in the house drain for the fresh air which would be admitted through the inlet vent, which would increase instead of diminish the foulness of the house drain.

Secondly, this deterioration in the purity of the air in the house drain would increase the danger arising from faults in the pipes or fittings. With a strong current of fresh air passing from the inlet to the outlet ventilators, the chance of air passing from the drain into the house is minimised, but with a reduced supply of fresh air the current would be more sluggish and the drain air would be more

disposed to find out the nearest exit, which would be into the house through any faulty pipe or fitting.

Thirdly, the reduction in the amount of ventilation in the drain would increase the danger of syphonage.

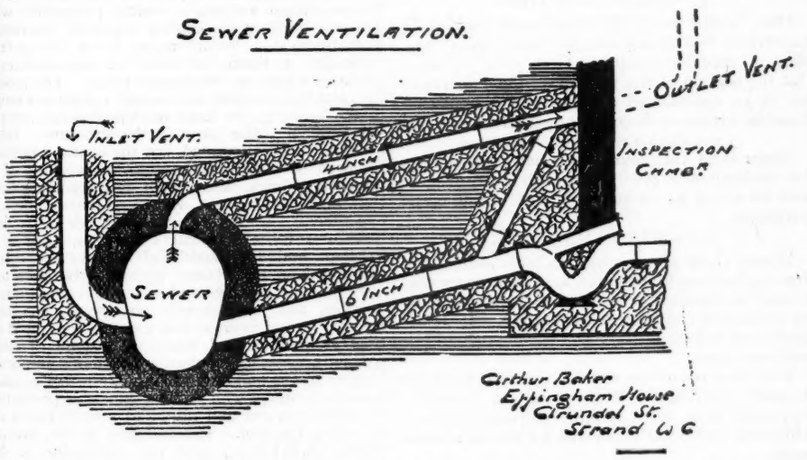
Fourthly, the present imperfect condition of sanitary law, science, and practice affords a house owner little protection against himself and still less against his insanitary neighbour. For instance, a certain local Sanitary Authority compels everyone to have a number of fresh air inlets to his drain, and, knowing the danger of such inlets becoming, under certain circumstances, outlets, he requires them to be fitted with talc doors. While these are in working order the plan may work well, but when the talc doors fall off, which they assuredly will do in time, the drain air will freely career into the nearest windows of its own and its neighbour's house. This would be bad enough in the present system, but how much worse would it be if the disconnector were removed?

The offer of sewer gas is a strange method of solving a sanitary problem and of promoting sanitary neighbourship.

There does not appear to me any good reason why the disconnector should be removed in order to carry out a system of ventilating the sewers if it should be found necessary (and this is essentially a point for municipal engineers to decide), that each house should bear its share of sewer ventilation.

The ventilating pipe might be taken at the expense of the local Sanitary Authority from the sewer side of the house drain disconnector to a suitable height above the roof of the house, but no scheme of this sort would work satisfactorily without a more scientific system of inlet ventilation than at present prevails, and the outlet pipe should be connected with the crown of the sewer. I enclose a sketch suggesting an arrangement of inlet and outlet pipes. The subject of the number and position of the inlet vents would also require very careful consideration in order to prevent their acting as outlets, and to ensure each outlet doing its fair share of the work. ARTHUR BAKER, R.C.A.

SEWER VENTILATION.



SIR,—In your issue of 23rd June, under the above heading, I agree with Mr. Bernard Dicksee in what he states.

With regard to Mr. Van Putten's opinion on "Interceptor traps," I fail to see any proof of their being small cesspools—*i.e.*, in a well-designed system of house drainage. I do not see where the theory comes in, by placing an "interceptor trap" in a house drain to prevent sewer gases entering same.

As to the low death-rate of Lewisham district possibly it might be still less if "interceptor traps" were introduced with proper judgment. Mr. Van Putten does not state the proportion of deaths likely to be caused by defective sanitary arrangements in that district, which is an important point.

Mr. Read's letter, published in the issue of June 30th, gives one to understand that he would have the sanitary authority take charge of house drains (see what Mr. B. Dicksee truly remarks).

Mr. Read, it seems, cannot see how sewers can be dealt with satisfactorily without the aid of drain owners, but I fancy there are engineers equal to the task.

As to the unventilated portion of the cross drain—*i.e.*, from sewer to interceptor—does not each flush from the house carry air with it and help to ventilate this usually short length of drain outside the house? and if a few bubbles of sewer air pass through the water seal it would pass into the open air, as Mr. Read himself proposes, by the soil air-pipe clear of the roof, but I venture to say even this would seldom happen.

There are traps made without a 2 in. drop, which are useful sometimes in extremely flat gradients, so that only 1 in. or so is lost by the insertion of a trap, and if it is necessary there are many ways of making up for the want of a 2 in. drop.

I have found in the case of a half-loaf of bread stuck in a 4 in. interceptor trap (lunatic asylum) that it was freed by the use of a mop stick as a plunger without bailing out the manhole.

When a flush can only amount to two or three gallons at *the top end* of a 50 ft. drain, the size of the pipes is of the utmost importance, even to 1 in.

I have designed very many drainage systems for dwelling-houses, having only 4 in. main line, and never found them unsatisfactory.

I do not see how Mr. Read would manufacture sewer gas in an interceptor trap unless he made it air-tight with no "air inlet" or outlet. Will Mr. Read maintain that the best forms of "interceptor," well arranged as to flush, size, &c., are of no benefit as a protection against germ diseases in adjacent houses? C. H. SUTTER.

"THE DEVASTATION OF NUBIA."

SIR,—May I be permitted to point out that the temple of Kom Ombo would only be submerged by making a reservoir at Gebel Silseleh. The reservoirs, either at Philæ or at Kalabsha, are to the south of Kom Ombo. SOMERS CLARKE.

SCIENCE AND ART DEPARTMENT EXAMINATIONS.

SIR,—I think "One of Those Misled" presumes slightly when he says it is evident that only those at the May examinations who "scrambled through the eight questions" at the first stage were invited to compete in the final. If he reads his question paper carefully he will find he may not attempt *more* than eight questions, and anyone answering six, or even five, "fully and correctly" would stand an excellent chance of "scrambling through," as it is well understood that the only qualification required is to satisfy the examiners that you have a sound knowledge of what you are writing about. No doubt your correspondent is disappointed at not passing, in which case I can sympathise with him, but he should not seek consolation by blaming those in authority for non-attendance to the rules. I should advise him to try again, when I hope he will meet with success. "ONE WHO HAS PASSED."

SIR,—In reply to "One of Those Misled," I do not consider that the Honours Building Construction Examination of 1894 was more difficult than it has been of late years. Neither do I think it required more time to work. As far as I know, no one has ever been granted a First-class who has not correctly answered eight questions. (Of course I am speaking entirely of the first paper of the Exam.)

Your correspondent is quite right in saying the subject has a very wide range, and a great deal of labour is necessary to work the subject thoroughly up, but I certainly do not consider the Exam. of this year any more difficult *in any way* than it was in 1892, when I had the pleasure of sitting. Of late years the examiners have demanded a much more complete knowledge of graphics, statics, and calculations with regard to iron structures. I believe four out of every five who sit know very little of this branch of the subject, and depend mainly upon their knowledge of "Rivington, No. III." Hence their ultimate defeat. FIRST HONOURS, 1892.

June 30, 1894.

SIR,—In addition to the points raised by your correspondent in your issue of the 30th ult., kindly allow me to mention that for many years past there has been a systematic evasion of the terms of the official syllabus which point out the course of study required.

The Examination is ostensibly intended to be on the higher principles of construction as applicable to buildings, yet every year questions are set on one or more of such separate and comprehensive subjects as architecture, sanitation, hot water supply, ventilation, and the various patented articles in the market which are used in connexion with buildings. So that a student scarcely knows what to prepare for; in fact, they usually get on best who ignore the official document altogether and study those things which are not mentioned in it.

If the subjects I have enumerated are really intended to be included, due notice ought to be given or the directory revised.

Then, again, why cannot a Saturday from 2 to 10 p.m. be selected for the second edition of the examination? It is a far more convenient day for working-class students for whose education these examinations are held, and does not break into business hours. The arrangement now decided on also seems to offer a great inducement to country students to sit for the Examination in order to obtain a free trip to London.

In conclusion, allow me to observe that the advisability of holding earlier in the year the examinations in those subjects which require a second trial for students in honours is a point which might very well be considered by the Department.

ANOTHER STUDENT.

THE COST OF WORKING AN ELECTRIC ELEVATOR.

SIR,—Possibly the following figures derived from actual practice of the cost of operation of an electrically-driven passenger elevator may be of interest to youf readers. The elevator in question was erected under my supervision for Mr. E. D. Stern, at 4, Carlton House-terrace, at the commencement of the present year, the contractors for the work being the Otis Elevator Company.

The elevator itself is fitted with a 600 lb. car, having a rise of 40 ft., and designed to work at the rate of 60 ft. per minute, and is fitted with all the latest improvements in regard to self-acting safety appliances.

It is operated from within by a simple regulating switch, which can be worked quite well by a woman or child; and everything has so far given great satisfaction.

The current is supplied from the mains of the Local Supply Company, whose invoice for the last quarter lies before me. The cost of current for working during the last three months amounts to the sum of 9s. 2d., during which time the lift has been in regular use, the number of trips being probably about 400, the cost of an average journey amounting to from one farthing to one-third of a penny, according to the load.

MORGAN I. M. WILLIAMS,
M.A., Assoc. M.Inst.C.E.

FOUNTAIN FEVER HOSPITAL, TOOTING.

SIR,—As an announcement has appeared in your paper that Mr. Edwin T. Hall has been duly appointed architect for the "Park" Fever Hospital, Hither Green, it appears necessary to me to say that on the same occasion and similarly I was appointed architect for the above by the Metropolitan Asylums Board, and that the work is to be proceeded with at once. A. HESSELL TILTMAN.

*** The former announcement was not official; it only reached us informally through the architect, in the same way as this one. We should of course have given both announcements together had we received them. We feel obliged to add, however, that we hope Mr. Tiltman's plan is to be a good deal modified before it is carried into execution. —ED.

HOLIDAY HOMES OF THE RAGGED SCHOOL UNION.

SIR,—The readers of the *Builder* are well able to judge of the additional suffering imposed by the hot weather on poor children who make up the families of three, four, five, and six, all too often to be met with living, each family, in one room. Brilliant weather that means enjoyment for comfortably housed and circumstanced people means an increase of sickness and death in the stifling room where we of the Ragged School Union find the bulk of our 50,000 poor little protégés. To enable them to better resist the heat we must make them strong by a fortnight's holiday in the country, where by means of fresh air, well-ventilated dwellings, and a regular and ample supply of wholesome food, they can acquire that increased measure of bodily vigour that will enable them to better contest those insidious diseases introduced by the heat into the homes of the semi-stifled and the half-starved. I therefore appeal to the generosity of your readers, and hope they will respond with contributions, however slight, to our Holiday Homes' Fund.

Holiday Homes Fund, JOHN KIRK,
Ragged School Union, *Secretary.*
37, Norfolk Street, Strand, W.C.

NORTHAMPTON INSTITUTE, CLERKENWELL.—The foundation-stone of the Northampton Institute, Clerkenwell, was laid by Mr. Charles Dorman, chairman of the governing body, on Monday. The architect of the building is Mr. E. W. Mountford, and Mr. W. Wallis is the builder. The contract price is 53,947*l.* The constructional steel and ironwork is being supplied by Messrs. W. H. Lindsay, Neal, & Co., of Paddington. Illustrations of the building have appeared in the *Builder* for April 15, 1893, and June 30, 1894.

The Student's Column.

DETAILS OF RURAL WATER SUPPLY.—II.

VARIOUS METHODS OF SUPPLY. ADVANTAGES AND DISADVANTAGES OF EACH.

THE selection of a source from which to obtain a water supply for a rural district is dependent on a variety of considerations, amongst which are the following:

1.—Purity of the supply.
2.—Volume and permanency.
3.—Elevation with regard to the district to be supplied.
4.—Distance from the district to be supplied.
5.—Nature of intervening ground.
6.—Purchase of water rights and easements.

In the "Suggestions as to Water Supply, &c." issued by the Local Government Board, the various sources from which water is usually obtained for purposes of domestic supply are arranged as follows:—

From mountain ranges, which act as condensers.
From rivers and streams.
From natural springs.
From wells artificially formed.
From impounding reservoirs.
From a combination of two or more of these sources.

Impurities likely to be met with in a source of water supply are of two kinds:—

1.—Those that can be removed by inexpensive mechanical means—*e.g.*, filtration.

2.—Those which cannot be thus removed, or in the removal of which heavy expense would be incurred.

In the former class are included organic matter of vegetable origin in suspension—*e.g.*, peat, also non-poisonous mineral substances, such as carbonate of lime.

In the latter class are included the products of decaying organic matter of animal origin, as well as actual organic life, or what is generally known as sewage contamination; also poisonous substances, such as lead, and other substances, such as common salt (NaCl) which become injurious when present in large quantities.

Undoubtedly the first necessity of a water supply for domestic purposes is purity, and this must be assured at the outset.

In taking samples of water for purposes of analysis a perfectly clean stoppered Winchester quart bottle, holding about half a gallon, should be used. The bottle should have been previously washed out with a little strong sulphuric (H_2SO_4), or hydrochloric (HCl) acid, and then rinsed with frequent changes of pure water until the rinsings do not redden a piece of blue litmus paper. Before taking the sample, the bottle and the stopper should be thoroughly rinsed with the water to be analysed, and should then be filled to the neck with the water, stoppered, sealed, and labelled on the spot, and, if possible analysed, within forty-eight hours.

In submitting a sample of water for analysis, as much information as possible should be given as to the situation of the source from which it has been taken, both geologically and with regard to any possible causes of pollutions in the vicinity. It is only by reading the analysis of a sample of water in close conjunction with the most careful observation of the surroundings and conditions of the source from which it has been taken, that any reliable opinion can be formed as to the suitability or otherwise of the supply for domestic purposes.

The River Pollution Commissioners, in their sixth report, classified the various sources with regard to potability as follows:—

Wholesome	1.—Spring water	Very palatable
	2.—Deep-well water	
	3.—Upland surface water	Moderately palatable
	4.—Stored rain water	
Suspicious	5.—Surface water from cultivated land	Palatable
Dangerous	6.—River water to which sewage gains access	
	7.—Shallow well-water	

Rainfall is, practically speaking, the ultimate source of all water supply, and the nearer the source the purer, though not necessarily the more palatable, the water. Rainfall is disposed of in three ways:—

First.—A portion is again evaporated.

Second.—Another portion flows over the surface of the ground to form streams and rivers.

Third.—The remainder sinks into the ground, and forms the underground reservoirs in which wells are sunk, issuing again at the lowest lip as springs.

1.—SPRING WATER.

The water from deep-seated springs is usually organically pure, though frequently highly charged with mineral substances. Where, however, the outcrop of the water-bearing stratum, at the point where it yields the spring, is of large area, and upon it houses, farmyards, and other possible sources of pollution are in existence, great care should be taken that the spring is not thereby affected.

A spring rises on the side of a hill at the junction of the upper green sand with the Oxford clay. A farmhouse is situated about 150 yds. distant from the spring, and 100 ft. above it, on the outcrop of the upper green sand. A sample of water from the spring was submitted to the County Analyst for examination, and the following is an extract from his report thereon:—

"This water is plainly contaminated with the products of decomposition of animal matter, and is liable, as has been the case in several recorded instances, to carry the infective matter of specific disease. A consideration of the facts of the case confirms me in this opinion, and the amount of pollution is greater than at first sight appears, because the green sand furnishes a water of more than average purity: probably about one-half the solid matter of this water is directly derived from the farm sewage."

The intervening land between the farmyard and the spring is grass pasture, and there is no other discoverable source of pollution.

2.—DEEP-WELL WATER.

Deep wells, especially those sunk through an impervious bed of considerable area, afford supplies of excellent quality. Care must be taken that the portion of the well above the impervious bed is so constructed as to prevent percolation from the surface or from the upper strata.

3.—UPLAND SURFACE WATER.

Water from this source is usually satisfactory, but is frequently discoloured with peat, even to such an extent as to render it unfit for domestic purposes.

4.—STORED RAIN-WATER.

Where there is no other available source, and there is freedom from smoke, &c., rain-water may be used for domestic purposes, but it is unpalatable on account of the absence of aëration. It should be filtered before storage, and the tank should be well ventilated.

The three remaining sources are not fitted for domestic purposes. River water is, however, frequently used, but it requires efficient filtration, which renders it too expensive for use on a small scale.

The next points for consideration are the volume and permanency of the source. To obtain this information frequent gaugings, taken over a considerable period, are necessary. The area of the watershed relied upon, the greatest and least rainfall, percolation, and evaporation are all important factors of the result. These points will be considered in a further paper. Information from the oldest inhabitants of the locality must not be allowed too much weight, or serious consequences may result.

In a recent survey for a village water supply, three apparently deep-seated springs of most excellent quality were found in close proximity to each other. These springs were gauged on the 21st March, 1893, and yielded a total volume of 820 gallons per minute. On April 8 they had fallen to 436 gallons per minute, and on May 6 to 207 gallon per minute. In June they were dry.

In the course of the same survey a spring was brought under notice, as to the permanency of which opinions were somewhat conflicting. Reference was made to the "oldest inhabitants," three nonogenarian labourers, who stated that they had known the spring all their lives, and that it had never yielded less than a certain flow. This was in February, 1893, and shortly after the spring failed.

The elevation of the source with regard to the district to be supplied is of great importance, for upon this will depend whether the natural flow of the water by gravitation can be utilised, or whether pumping must be brought into requisition. Especially for a rural supply, gravitation should be secured if possible; for although the outlay is generally much greater, a heavy annual cost is avoided. Occasionally, where a sufficient quantity and fall of water are available, water-wheels, turbines, and hydraulic rams, which require no fuel and little attention, may be used; and, in exposed situations, windmills are sometimes employed for pumping water on a small scale.

In deciding upon the relative merits of a gravitation and a pumping scheme, the distance of the source from the district to be supplied forms an important element, for if the distance over which the water has to be carried, in the former case, is great and the fall slight, pipes of large diameter may be required, entailing considerable expense, while in the latter case the length of pipe may be inconsiderable.

Especially in a gravitation scheme, on account of the relatively great distance over which the supply has usually to be carried, the question of easements is of great importance; whilst the question of water rights affects both gravitation and pumping schemes to much the same extent. These claims frequently lead to so great an expense as to necessitate the total abandonment of a water supply scheme.

Every detail affecting these points should be carefully ascertained before any scheme is fully considered, and agreements in writing should be entered into with all parties in any way interested before works are commenced.

In a recent water supply scheme a claim was overlooked which might easily have been settled for £5. In consequence of this omission a trial took place four years later, costing the authority who carried out the scheme over £600.

GENERAL BUILDING NEWS.

PHYSICAL LABORATORY, SOUTH AFRICAN COLLEGE.—According to the *Cape Weekly Times*, the work of erecting a new physical laboratory at the South African College is being proceeded with. The new building will contain a general laboratory, 51 ft. by 46 ft., a lecture room, 36 ft. by 27 ft., a workshop, a room for electrical experiments, a professor's and an instrument room. The laboratory and lecture-room are carried up the full height of the building, but large attics for storage are provided over the other parts of the structure. Inside no ornament is attempted, but the contract includes fitting of every kind necessary for the working of the laboratory, brick tables built independently from the floors to prevent vibration during delicate experiments, sliding blackboards, draught cupboards, a forge, carpenters' benches, teak table benches, and cupboards and drawers for instruments. The instructions given to the architects were to design as large and substantial a building as possible, and consequently no expense has been lavished on the interior, but a simple treatment has been adopted of red brick, with stone dressings sparingly used to emphasise the more important features of the building. The design also contains a covered stoep, with stone columns to protect the entrance from sun and rain, and a small turret surmounting the roof. The architect is Mr. Herbert Baker, A.R.I.B.A., and the contractor is Mr. Maxwell.

RESTORATION OF CONGREGATIONAL CHURCH, BURTON-ON-TRENT.—Burton-on-Trent Congregational Church is to be newly seated, and to undergo restoration and decoration, from the plans and designs and under the superintendence of Mr. R. E. Carpenter, architect, of Burton.

ENLARGEMENT OF HOLY TRINITY SCHOOLS, BURTON-ON-TRENT.—These schools, situate in Hawkins-lane, are being enlarged from the plans and under the supervision of Mr. R. E. Carpenter, architect, Burton, as approved by the Education Department. The builder is Mr. J. Varlow, of Burton.

RESTORATION WORKS, BRISTOL CATHEDRAL.—On the 4th inst., the Dean of Bristol fixed the capstone of the central tower of Bristol Cathedral. When the work was undertaken, under the superintendence of Mr. Pearson, it was found that the tower was in an extremely dilapidated condition, particularly the south-west and west portions that were most exposed to the weather. The whole of the external face of the tower has been restored, stone for stone; every stone or moulding which was so weather-worn as to have lost its original face, or that showed signs of active decay, has been cut out and renewed exactly upon the old lines. It was found necessary to entirely renew the weatherings—three on each face. In the upper stage, the original mullions were found to be of very weak construction. These have been taken out and replaced by others of greater depth. New battlements, parapet, pinnacles, and angle-turret have been built, and some of the original stonework has been embodied in them. The design of these is exactly the same as of the former ones taken down. A new roof has been put on.

METHODIST SCHOOL, FARNWORTH, LANCASHIRE.—The memorial stones in connexion with a new Primitive Methodist school in Queen-st., Farnworth, were laid a few days ago. The dimensions of the building are 57 ft. by 59 ft. At the entrance to the schools is a vestibule, and from this leads one of the staircases into galleries and class-rooms above, 30 ft. by 40 ft. The infants' room is 30 ft. by 14 ft. The minister's vestry is enlarged, and provided with lavatory and vestibule, and a staircase leads direct from the vestry on to the platform. A kitchen is

provided in a corner of the school-room. The galleries and upper class-rooms are reached by two staircases, seven class-rooms being provided on the first floor, and likewise a choir vestry. The gallery is carried round three sides of the school, the class-rooms being divided therefrom by boarded partitions, stained and varnished. The heating is on the low-pressure hot-water system, and the buildings are ventilated by wall inlets and roof extractors. The contract has been let to Messrs. Coope Bros., of Farnworth, and the work is being carried out under the supervision of Mr. T. Greenhalgh, architect and surveyor, Bolton.

MISSION HALL, PECKHAM.—The foundation-stone of a new mission hall, situated in Meeting House-lane, Peckham, was laid recently. The building will accommodate over 250 persons, with two class-rooms, kitchen arrangements, &c. Mr. R. P. Whellock, of Nunhead, was the architect, and Mr. G. Simmonds the builder.

HOTEL, CARDIFF.—On the 6th inst. the opening took place of the Avondale Hotel, Cardiff. The hotel was built and fitted up by Messrs. W. Thomas & Co., of the West Bute Dock (under the superintendence of Mr. J. S. Chubb), from plans prepared by Mr. E. W. M. Corbett.

RESTORATION OF AN OLD CITY CHURCH.—According to the *City Press* the interior of the Church of St. Stephen, Coleman-street, has just been restored. The old galleries have been taken down and replaced, and the upper gallery at the west end has been refaced. With regard to the seating accommodation, whereas there were formerly only two side aisles, space has been economised, and there are now two side aisles and a central aisle of considerable width. The old pews have been removed, with the exception of the pew-ends. The walls have been repaired and recoloured, while the old windows have been replaced by new ones set in cathedral and tinted glass. The old wooden flooring has given way to a solid wooden block floor, which covers a concrete foundation of several inches. Hot-water pipes for heating purposes have been introduced. A new screen has been erected at the west end, and will be filled in with glass. The old pulpit, which formerly stood on a high pedestal in the centre of the church, has been removed to the northern side, and lowered. It may be said that the west end of the church has been practically rebuilt, and all the ancient and valuable carving has been preserved and reused. New altar steps have been put up in place of the old ones, while the Communion space has been enlarged. The church has also been lighted throughout by electricity by Messrs. J. F. Clarke, of Moorgate-street, five brackets having been provided for each side of the interior. The whole of the work has been executed by Messrs. Dove Bros., under the superintendence of Mr. J. Ebenezer Saunders, F.S.A. The work of redecoration and the glass work have been done by Messrs. A. L. Moore & Co.

CRIPPLEGATE INSTITUTE.—The memorial-stone of this building, situated in Golden-lane, E.C., was laid on the 3rd inst. by the Duke of York. The building is being erected from designs by Mr. Sidney R. J. Smith, and will contain a library, concert hall, and technical class-rooms.

CHURCH, GOATHLAND, WHITBY.—On the 5th inst. the foundation-stone was laid of a new church at Goathland, Whitby. The cost of the new building will be about 2,000*l*. The architects are Messrs. Demaine & Brierley, of York; and the contractor is Mr. Barnes, of Malton. The building will be of stone, and the style of architecture adopted is Late Gothic.

THEATRE, WOLVERHAMPTON.—The commemoration-stone of a new theatre, which is being erected in Lichfield-street, Wolverhampton, was laid recently. The new theatre stands with a frontage towards Lichfield-street of 123 ft., with a depth from Lichfield-street to Berry-street of 122 ft., the length of the site in Berry-street itself being 114 ft. The building is practically isolated, being in main streets front and back, and having an 8 ft. passage-way on either side between that and the adjoining buildings. The theatre will be divided into five classes of audience, all classes of the audience being kept apart. On either side the grand entrance of the theatre in Lichfield-street are two shops, with basements underneath. On the ground floor will be the pit and pit stalls; the dress-circle will be on the first tier of the amphitheatre and the gallery on the second floor. The dress-circle tier itself has six rows of seats, accommodating 250 persons. The amphitheatre will hold 150 people, and the gallery of ten rows 700 people. The builder is Mr. H. Gough, and the theatre is being erected from the design and under the superintendence of Messrs. C. T. Phipps & Son, architects, of London.

CHURCH OF ST. WERBURGH, DERBY.—The church of St. Werburgh, Derby, was consecrated recently by the Bishop of Southwell. The architect of the building was Sir Arthur Blomfield, but during the earlier stages of the work it was carried out under the direction of Mr. Percy Currey, architect, of Derby. The building is principally of Coxbench stone with the exception of the tracery and moulding work, which is of Hollington stone. The roof is of blue slates. The total length is 137 ft. 3 in., and the width (inside dimension) 62 ft. 2 in. The height to the ridge is something over 60 ft. The chancel is 40 ft. 6 in. by 27 ft., the organ-chamber 19 ft. 6 in. by 19 ft., the chancel aisle 19 ft. by 12 ft. 6 in., the nave 88 ft. 8½ in. by 28 ft. 10 in., the aisles being the same length by 14 ft. The main entrances are at the north end and in the west aisles, and there is a small exit, with a door opening outwards, from the chancel aisle. The chancel roof is a wagon roof with open timber and hammer beams, whilst the internal roofing of the nave is of pitch-pine, unstained and unvarnished. Within the sanctuary, which is enclosed with an oak rail with wrought-iron standards, is a floor of glass mosaic. The sanctuary steps are of polyphant-stone. The carved interior of the west end was by Messrs. Earp & Hobbs, who were also the sculptors in connexion with the work. At the gable end of the new church over the main entrance there is a niche containing a figure of St. Werburgh, sculptured by Mr. Bridgeman, of Lichfield. The organ has been renovated and refixed by Messrs. Lloyd, of Nottingham, in the south-west transept. The old lectern used in the old church is again brought into use, and the nave is filled up with the old seats. The church will accommodate 800 worshippers, the sides being filled with chairs. The old chancel forms a morning chapel, and the vestry will be screened off by means of a curtain. The ventilation of the church is effected by means of Honeyman's Trunk Ventilator; whilst the building is heated by Haden's combined system of hot air. The whole of the floors of the church, with the exception of the chancel and two porches, are of pitch-pine blocks. At present the church is only temporarily lighted by gas. The window in the new chancel was practically designed and made by Mr. C. E. Kempe, of London. The subject is "The Witness to the Atonement." There are seven lights, divided into three groups, the central group being composed of three lights, and those on each side of two. The window in the south aisle, consisting of three lights, is also by Mr. Kempe. The window at the west end of the north aisle is by Messrs. Ward & Hughes. All the windows, with the exception of those mentioned, are glazed with white sanded cathedral-glass in lead lights. The pulpit is of wrought-iron, semi-circular in shape, and supported by seven iron pillars upon a stone base. The steps, which are of oak, are provided with a reeded oak rail. The floor is of oak. The work was executed by Mr. Edwin Haslam, of the St. Helen's Engineering Works, Derby. The wood-work was done by Messrs. Walker & Slater, and the stone base was supplied by Mr. Tinkler. The works manager in connexion with the erection of the church has been Mr. A. L. Tofts, and the architect has been represented by Mr. G. Horton. The contractors were Messrs. Shillitoe.

SANITARY AND ENGINEERING NEWS.

SEWERAGE SCHEME, YORK.—In view of the approaching completion of the York sewerage scheme, the members of the City Council, on the invitation of the Chairman and members of the Sewerage Committee, recently inspected the pumping-station at Fulford, and afterwards the disposal works at Naburn. The pumping-station is the point at which, when the scheme is completed, the whole of the sewage will be delivered by an egg-shaped sewer, 6 ft. 9 in. by 4 ft. 6 in. In addition to the construction of new sewers, works have been carried out in various parts of the city for the removal and interception of old drains. All the sewage from the city, after gravitating by means of the new sewers constructed under contract No. 2, will be received at the Fulford pumping-station, where it will be pumped up and delivered to the precipitation tanks at Naburn through a cast-iron rising main. On reaching Naburn the rising main will discharge the sewage into a long culvert or open channel into which chemicals will be delivered through another channel. After being thus chemically treated the sewage will pass into the precipitation tanks, from which the effluent water will either be delivered direct into the river or filtered over the land belonging to the Corporation. The sludge or solids, which is precipitated in the tanks as the effluent water is gradually drawn off, will be passed through sewage presses and formed into cake manure. Practically the whole of the work comprised under the head of No. 2 contract is completed, together with the most important portions of the contracts 3, 3A, and 4. The rising main from the Fulford pumping-station to the Naburn precipitation works is finished, and the works at both these places are in an advanced stage. Mr. James Mansergh, M.Inst.C.E., has acted as consulting engineer to the scheme, and the work has been carried out under the personal supervision of Mr. James McKie, A.M.Inst.C.E., as resident engineer.

WATER SUPPLY, COLEFORD, SOMERSET.—The Frome (Somerset) Rural Sanitary Authority have appointed Mr. J. E. Willcox, C.E., of Birmingham, Consulting Engineer in connexion with the scheme for water supply for the district of Coleford, which has been prepared by their Surveyor, Mr. W. T. Purnell.

SEWERAGE WORKS, BRIDGEND, GLAMORGAN.—Major-General C. Phipps Carey, R.E., held an inquiry at the Town Hall, Bridgend, Glamorganshire, on the 27th ult., into an application made to the Local Government Board by the Urban Authority of the Bridgend Local Board and the Rural Authority of the Bridgend and Cowbridge Union to borrow 9,000*l*. and 7,000*l*. respectively for works of sewerage. The main outfall from the town of Bridgend to the sands, the site selected for treatment of the sewer, is about 2¾ miles in length, the cost of which will be borne by the above-named Authorities in proportions already agreed upon. The towns of Tondu and Aberkenfig, and the districts adjoining them, will be efficiently drained. Mr. George Fenton Lambert and Mr. J. C. Rees, the engineers of the scheme, went into the technical details of the scheme, and explained the plans which they had prepared. It is estimated to meet the requirements of about 10,000 people. The Inspector afterwards inspected the site of the proposed outfall and line of sewer, also the district above Bridgend, viz., Tondu and Aberkenfig. There was no opposition to the scheme.

WATER SUPPLY, BIRMINGHAM.—An excursion to the Elan Valley in mid-Wales was made on Tuesday by the members and officials of the Birmingham Corporation and others to inspect the works which are in progress near the junction of the rivers Elan and Claerwen, for supplementing the existing water supply of Birmingham by tapping the upper watershed of the mountains of Cardiganshire and Radnorshire. The scheme in question (we quote from the *Times*) originated some four years ago in a report of the Water Committee of the Birmingham City Council, calling attention to the inadequacy of the actual water supply for the rapidly-growing needs of the city, and urging that arrangements should be made for opening up fresh sources of supply in Wales in accordance with the recommendations of Mr. Gray, the waterworks engineer, and Mr. James Mansergh, of London, who has been called into consultation for this purpose. The first portion of the undertaking, which is calculated to bring twenty-seven million gallons of water to Birmingham daily, is estimated to cost 3,621,950*l*., but the estimate for the entire scheme is about 6,600,000*l*. The lower extremity of the waterworks is at Caban Coch, upon the Ellan, some three miles from Rhayader. Mr. James Mansergh gave a brief description of the works, and conducted the party round the principal points of interest. At the summit of a steep tramway, leading to a stone quarry, where the valley narrows considerably, the lowest and most important of the series of dams is being constructed. It will be 120 ft. high in the centre, will measure 600 ft. from bank to bank, and its thickness at the base will be the same as its height. The foundations are laid in a trench cut in the solid rock of the river bed, over which the water pours down in times of flood in enormous quantities. The scheme of the Birmingham Corporation is to impound a large part of this flood-water, and to use it, partly for the supply of Birmingham, and partly in a regular flow of compensation water to the river, as required by the Act of Parliament, in the interest of the riparian owners along the Wye. The effect of erecting the Caban Coch dam will be to turn some four to five miles of valley into a deep serpentine lake, having a top-water area of 479 acres and a capacity of 7,540 million gallons. The dam will present to this vast body of water an almost upright face, but the outer, or lower, side will be a curvilinear slope. In times of flood the water will pass over the top of the dam to a depth of about 3 ft. Rather less than half a mile from Caban Coch is the confluence of the Elan and Claerwen, where the valley bifurcates with the two rivers, the reservoir extending about a mile up the one and some two miles up the other. Crossing the stream, the route of the party was up the Elan to the site of a submerged dam, to be built across the reservoir 40 ft. below the level of the top water. The purpose of this erection is to stop back some 500 million gallons of water contained in a portion of the reservoir above, which is reserved for the use of Birmingham consumers. Just behind this submerged dam commences the culvert to Birmingham, in the form of a tunnel carried for a mile and a quarter through the mountain Y Foel. This tunnel will measure about 8 ft. 6 in. by 8 ft. 6 in., and will convey, if required, 75 millions of water a day. The water will be carried by tunnels, culverts, and pipes to Frankley, near King's Norton, where it will be filtered, and pass by gravitation to the Monument-road reservoir, Edgbaston. The submerged dam will carry a viaduct, by which a new road will cross the reservoir in lieu of the bridge hitherto used near Cwm Elan. Higher up the Elan Valley will be the Pen-y-gareg dam, forming the lower end of a lake having an area of 424 acres and a storage capacity of 1,320 million gallons, and the Craig-y-Allt-Goch, with an area of 217 acres and a capacity of 2,000 million gallons. This chain of three reservoirs, the lower one with its inner reservoir already described, will provide in the driest season for 27 million gallons of water a day to Birmingham, and a like quantity of compensation water. If more water is wanted, additional pipes will have to be laid for its conveyance, and the extra water will have to be taken from the Claerwen by the construction of a series of three reservoirs upon that stream, having an aggregate area of 661 acres and a capacity of 6,500 million gallons.

FOREIGN AND COLONIAL.

FRANCE.—It appears that the maintenance of the Eiffel Tower in the 1900 Exhibition is not to be obligatory on competitors. At the request of a certain number of members of the committee the competitors are to be left free to modify or suppress the Eiffel Tower in their designs, if they prefer to do so. In case of suppression, the State will have a pretty large indemnity to pay to the Eiffel Tower Company, but the artistic character of the 1900 Exhibition will gain greatly by it.——The Department of Public Works is studying a new method of verifying the elasticity of bridges by the aid of photography. The photographs will give the exact depression and oscillation of the bridges under various loads.——The Minister of Fine Arts has commissioned M. Roty to design a medal in commemoration of the funeral of M. Carnot.——M. Paul Dubois, the sculptor, and Director of the Ecole des Beaux-Arts, is to execute the portrait of the new President, who is a personal friend of his, for the next Salon.——The bronze statute of Condorcet, by M. Jacques Perrin, has been placed on its pedestal on the Quai Conti, and is to be inaugurated on the 14th.——M. St. Marceaux, the sculptor, is to execute the monument to M. Tirard, former president of Council, who died last year. The model, which has just been completed, represents "Devoir" seated before the tomb of Tirard, whose medallion portrait is sculptured on the top stone of the monument.——The "Compagnie des Mines" of Lens has erected at Haumont a church of a novel construction, entirely in steel, composed of caissons so constructed as to leave a stratum of air of 15 to 50 centimètres between the inner and outer walls. They are cross-braced internally with ties, and the air can, if desired, be put in circulation between the two skins. The main object is to produce a building in which internal variation of temperature can be prevented. The interior face is lined with wood.——The Municipal Council of Lyons has voted the erection of a monumental statue to President Carnot.——It is announced that a number of valuable paintings have been stolen from the Longchamps palace at Marsailles. The Borelli Museum in the same town was robbed in a similar manner some little time since.—— A Historic and Archæological Society has been founded in the neighbourhood of Corbeil and Etampes, the main object of which is to prevent destruction of ancient objects of interest.——The eminent sculptor and ceramic artist, Joseph Carriès, who was an important adherent of the Champ de Mars Salon, has died at the age of thirty-eight. The first exhibition in which he attracted attention was that of 1878; later, in 1887, he exhibited various busts marked by great power of style and expression, almost all produced by the *cire perdue* process. He received Legion of Honour decoration in 1892. He was a native of Lyons.

MISCELLANEOUS.

SANITARY INSTITUTE.—At an examination for Inspectors of Nuisances, held at Norwich on the 6th and 7th inst., eighteen candidates presented themselves. Questions were set to be answered in writing on the 6th, and the candidates were examined *viva voce* on the 7th. The following eight candidates were certified to be competent, as regards their sanitary knowledge, to discharge the duties of Inspector of Nuisances:—A. Garner, Bloxwich; G. Gavin, 95, Asylum-road, Peckham; W. E. Gleave, Everton, Liverpool; Ellen Louisa Hart, 44, Amptill-square, N.W.; A. Kent., Skelton, Stoke-on-Trent; R. Miller, Dundee; F. Motum, Gundisburgh, Woodbridge; J. J. Newman, 73, Manor-road, Brockley, S.E.

STABLES FOR THE EMPRESS FREDERICK OF GERMANY. — At her new Palace at Cronberg (Taunus), the Empress Frederick of Germany has had a range of stables built from the plans of Herr Ihne, the well-known architect, of Berlin. The palace is situated close to the town of Cronberg on the Taunus Hills. The stables are at the rear of the castle, planned in the form of a quadrangle, one side of which is occupied by coach-houses. In the principal stable there is one range of twenty stalls of extra size and strength for large carriage horses. By the Empress's commands the stables fitted by Messrs. Musgrave & Co. for the Prince of Wales at Sandringham were taken as a model, and everything was done under the Empress's personal supervision. The divisions between stalls have wrought-iron open-work panels, the head end of which between the mangers is made solid, to prevent the horses seeing through at feeding time. Each stall division has Musgrave's patent sliding barrier to draw across the gangway at night, so that each horse is effectually confined in his own stall in case of breaking loose. Each pillar terminates in a polished brass ball, with brass neck mouldings, rings, chains, &c. The lower part of each division is filled with teak, raised well off the floor by a ventilating sill, which runs off water freely in washing, and allows air to play between the wood panelling and the floor. The mangers are enamelled inside, and completely encased underneath by a well-rounded sheathing of steel plate—all formed so as to prevent crib-biting and to be absolutely harmless to the most vicious horse. The halter straps work noiselessly through vitrified bushings with the least possible friction or wear. The loose boxes are on another side of the yard, and are made to correspond with the stalls. Boxes for sick horses and some smaller stalls for ponies have also been provided. All the walls have panels of vitrified glass tiles of a pale green colour above the level of the mangers, impervious to moisture and with an indestructible surface. Electric light is fixed throughout the buildings. The drainage is by gutters and traps to which a flushing arrangement is connected from high pressure water mains. In central positions arrangements have been provided for quick and easy removal of soiled litter, &c., and for supply of fodder, &c., from hay-lofts and bins. The whole of the work has been carried out by Messrs. Musgrave, with their patent fittings and latest improvements of every kind,

CHURCH SANITARY ASSOCIATION.—Last Sunday was observed in many parishes as "Sanitation Sunday," when mention was made from the pulpit of the aims of the Church Sanitary Association. The annual sermon was preached in St. Paul's Cathedral by the Archdeacon of London, Dr. Sinclair, who said that to the majority of the dwellers in country districts the advantages of satisfactory drainage, dry soil, wholesome food, fresh air, cleanliness, warm and purified clothing, the laws of illness, the principles of infection and contagion, the requisites of convalescence, and the importance of the first symptoms of disease were probably unknown. This want of knowledge had called into existence the Church Sanitary Association which aimed at inducing the clergy in every parish to inculcate the laws of health.—The Rev. R. B. Machel, Canon of York Minster, preaching at St. Martin's Church, York, said that while ministers of religion had a special work in preaching the higher life of the spirit, yet that that preaching was incomplete if it was not brought into the range of practical every-day life and did not supply high motives for doing common every-day work in the best way for both soul and body. — The Rev. Arthur Robins, preaching at Holy Trinity Church, Windsor, said that the surroundings and associations of the dwellings were potent influences for good or evil in the life, and here it was that the moral miasma of insanitary areas settled like an ague upon tens of thousands of the souls of our poor. When the conditions were such that all physical and sanitary provisions for health and decency were in abeyance, then every moral law was and would be suspended.—The idea of the Church Sanitary Association is an excellent one, and it is to be hoped that it will have important results in strengthening the hands of those who are endeavouring to improve the sanitary condition of the poor. As is well known, one of the great difficulties is to get the poor themselves to take any interest in the efforts made to better their own condition in this respect; and the clergy may have much influence in persuading them of the great importance of sanitary conditions of living.

SCHOOL BOARD FOR LONDON. – The annual exhibition of work executed by the scholars and pupil-teachers in the London Board Schools will be held at the "Hugh Myddelton" Schools, St. James'-walk, Clerkenwell (near the Farringdon-road station), on Friday, Saturday, Monday, Tuesday, and Wednesday, July 20th, 21st, 23rd, 24th, and 25th. The exhibits will include various branches of drawing, shading, designing, outline from plants, casts, and models, and modelling in clay, designing in coloured paper, etc. The exhibition will be publicly opened by Mr. T. Armstrong, Director of Art at the Science and Art Department, at noon on Friday, July 20th, and will remain open from 12 o'clock till 9.30 each day. Admission free.

LEGAL.

A BUILDING DISPUTE AT TORQUAY.

IN the Chancery Division on Wednesday, Thursday, and Friday, the 4th, 5th, and 6th insts., Mr. Justice North had before him the case of Oliver *v.* Hosking, which was an action brought by Mr. Thomas Oliver, the owner of the Royal Hotel, Torquay, for an injunction to restrain the defendant, Mr. John Hosking, a restaurant keeper and baker, from interfering with building operations in connexion with the hotel.

Mr. Samuel Hall, Q.C., and Mr. Ryland appeared as counsel for the plaintiff, and Mr. Bramwell Davis for the defendant.

Mr. Hall, in opening the plaintiff's case, said that the parties were neighbours, and the Royal Hotel was built over a passage which was formerly arched over, but the archway had been pulled down by the plaintiff during the course of the alterations and a steel girder put in its place. The defendant's allegation was that the plaintiff had no business to make that alteration, and that the plaintiff had changed the burden of the support. The learned counsel said that the alteration did not increase but diminished the burden, as the weight of the new building was less than half that of the old one, and the support was obtained from the identical spot where it was obtained in the old building.

Mr. Justice North: Is your building higher than it was before?

Mr. Hall: No, my Lord.

The learned Counsel, continuing, said the defendant took a crowbar and demolished and knocked down a portion of the structure and, added counsel, "he was proceeding to argue with us with this crowbar." An arrangement was afterwards arrived at by consent, whereby the defendant agreed to leave the question in issue to the Court. The buildings in question were situated upon Sir Lawrence Palk's estate, and the plaintiff asked for an injunction to restrain the defendant from interfering with the alterations. The defendant counter-claimed, and asked for a declaration that the wall on the west side of his premises formed part of his premises, and he also asked for an injunction to restrain the plaintiff from erecting any stud work facing Forwood-street.

The plaintiff, in his examination-in-chief, said that he was a cabinet-maker and auctioneer. He purchased the Royal Hotel in January, 1893, and shortly afterwards gave instructions for the alterations in question to be made. He was called by one of the workmen one day to the scene of the alterations, and saw the defendant with a crow-bar in his hand threatening to knock down anything which the workmen put up against the wall. He (defendant) had knocked down a portion of the studwork before witness arrived. Witness asked defendant to settle the matter with his (witness's) solicitor, but he refused.

Cross-examined, he did not obtain defendant's consent before making the alterations. He made no inquiries as to his rights in respect of the wall. He did not assume that the wall belonged to him, but he assumed that he had easements there.

Mr. Edw. Richards, architect and surveyor, of Torquay, who was employed by the plaintiff to prepare plans for the alterations in question, pointed out to his Lordship upon models the alterations that had taken place, and the difference between the old and the new building. There was an old beam supporting the archway, and when the archway was pulled down he (witness) thought it advisable to insert two steel girders where the old beam had been. All that had been done at the hotel was to pull down the front wall and to build up a new one. Nothing else was interfered with. The new wall was not so heavy as the old one. The two steel girders supporting the new wall rested in the same hole that the old beam did. In his opinion the alterations had not damaged in any way the stability of the defendant's wall.

Cross-examined, the cracking of the balcony stone was caused by the weight of the arch. The back of the arch was firm and the weight it had to bear was about the same as the front.

Mr. Henry Hardy, architect and surveyor, of Westminster, gave evidence as to making a survey of the plaintiff's and defendant's premises, and said that he considered the alteration a great improvement.

Mr. Bramwell Davis, in opening the defence, said that his contention was that the wall belonged to defendant by virtue of a lease of 1809, which had since been renewed, but undoubtedly the owner of the two properties conferred on the owner of the Royal Hotel a right of easement. That easement was principally the archway, and the plaintiff had no right to alter that.

Mr. Edw. Appleton, an architect of Torquay, said that he was called in by defendant in October, 1893, and in his opinion the wall was the property of the defendant.

His Lordship, after hearing further evidence and the addresses of counsel, in giving judgment, said it was clear that the wall was a completed structure before the Royal Hotel in its recent form was built. But even allowing that the defendant was an owner of the wall, the plaintiff had the right of support from it. In rebuilding the arch and altering the position of the windows the plaintiff, so far from putting additional burden on defendant, had done him material advantage. He held that under the leases defendant was entitled to the wall on the east side of the passage, that is the wall in dispute, subject to the plaintiff's right to support. He should make an order to restrain the plaintiff from putting ornamentation on the defendant's wall, and should restrain the defendant from interfering with the plaintiff's stud work or other works and alterations in or upon the passage. He declined to give costs to either party.

MEETINGS.

SATURDAY, JULY 14.

Architectural Association.—Visit to Oxford.

Architectural Association Camera Club.— Visit to Battersea Polytechnic Institute. 2.30 p.m.

MONDAY, JULY 16.

Society of Antiquaries of Ireland.—General Meeting, to be held in the Public Hall, Carnarvon. 8 p.m.

TUESDAY, JULY 17.

Cambrian Archæological Association.—Annual Meeting, to be held at Carnarvon in conjunction with the Royal Society of Antiquaries of Ireland.

WEDNESDAY, JULY 18.

Builders' Foremen and Clerks of Works' Institution.—Half-yearly meeting of the members. 8.30 p.m.

Cambrian Archæological Association.—Annual meeting, Carnarvon (continued).

THURSDAY, JULY 19.

Cambrian Archæological Association.—Annual meeting, Carnarvon (continued).

FRIDAY, JULY 20.

Cambrian Archæological Association.—Annual Meeting, Carnarvon (continued).

SATURDAY, JULY 21.

Cambrian Archæological Association.—Annual Meeting, Carnarvon (concluded).

Northern Architectural Association.—Annual Excursion, to be held at Thirsk, Rievaulx, and neighbourhood.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

10,543.—DECORATING TILES, &c.: *T. H. Stubbs.*—A method of decorating walls or surfaces or tiles by the use of an air blast nozzle, a colour nozzle, and a stencil, all used with machinery in combination for the manufacture of tiles or decorative slabs.

12,380.—PADS FOR STAIRS: *S. Lee.*—The principle of pneumatic or inflated tubes such as are used for bicycle tyres is applied by this to the treads of stairs, &c.

13,964.—GRIDS FOR GULLEY-TRAPS: *F. C. Lynde.*—A grid or box having within it a flanged plate into which the water and sand, small stones, and other foreign matter are washed, and are retained by the action of the water being drained off by a flanged plate, which is capable of being removed and cleaned.

14,256.—COVER FOR USE IN DRYING BRICKS: *M. Gentry.*—A light framework is formed of deal posts framed together, and the roof is made of light laths to open. The cover can be raised or lowered at will by means of pulleys and lines. The frames are covered, and made water-tight with boiled oil and resin. It is not a fixture, and can be made large enough for screening from wind and storms.

14,450—CLOSING CASEMENTS: *J. Lilly.*—To allow for the fastening of the casement in any position a lever grip and catch is used. Upon the fixed framing a bracket is secured, to which one end of a stout cord or flexible rod or chain is attached, and a catch is arranged to secure it at any interval, or when fully open or closed. The mechanism is controlled by a cord working over a pulley.

15,637.—ROOFING TILES: *C. Major.*—These are roofing tiles made with interlocking ribs and recesses. The peculiar shape and the method of fixing prevents rain or snow from penetrating the roof.

NEW APPLICATIONS FOR LETTERS PATENT.

JUNE 25.—12,263, J. Coulthurst, Socketted Earthenware Drain-pipes.—12,268, W. Jenkinson & T. Cartwright, Syphon Flush Cistern for Water-closets, &c.—12,276. J. Graves, Sheet Metal Mantels.—12,299, A. Protheroe, Paint.

JUNE 26.—12, 311, A. Monk, Water Waste Preventer and Capsizing Flush Cistern.—12,321, F. Parkin, Sewer Gas Traps. — 12,322, W. Rodgers, Syphon Flushing Cisterns.—12,350, W. Bruch, Hydraulic Cement.—12,354, R. Hodges & S. Hill, Fastenings for Fanlights, &c.—12,376, G. Lester, Sash-fasteners. —12,383, M. Ahern, Glazing and Enamelling Bricks, &c.

JUNE 27.—12,418, A. Sharp, Door and Window Frame for Use in Concrete Buildings.—12,419, Plant, Jackson, & Co., Zinc or other Metal Clip for Fastening the Roll-caps of Metal Roofing-sheets.—12,422, F. & F. Ryan, Instruments for Obtaining Levels, Bevels, and Perpendiculars of Buildings, &c. — 12,457, B. Heymanson, Bottom Bolt Spring Socket for Folding Doors.—12,500, A. Rousseau, Brick Presses.

JUNE 28.—12,525, C. Whitehall, Attaching Door-knobs to their Spindles.—12,555, F. Willmott and others, Ratchet Braces.—12,559, L. Milnes, Disinfecting Air-inlet Ventilator for Drains.

JUNE 29—12,609, J. Hulton, Flooring Cramp.—12,614, A. Dyson, Water-closets.—12,636, A. Marshall, Ventilators and Chimney Caps.—12,651, A. Paillett, Hinges or Supports for Gates, Doors, &c.—12,667, W. Clark, Fireproof Building Construction.

JUNE 30.—12,701, J. Holt, Combined Hammer and Screw-driver. — 12,719, J. Anderson, Automatic Dovetailing Machines.—12,745, A. Erdmann, Nails, 12,747, R. Gardner, Excluding Dust and Draught and Preventing Slamming and Rattling of Doors, Window-sashes, &c.—12,753, J. & J. Hampton, Limited, Flooring Cramps and Mitre Cramps.

PROVISIONAL SPECIFICATIONS ACCEPTED.

9,224, R. Duncan & J. Graham, Safety Fastenings for Windows.—9,235, A. Turley, Sewer Pipe or Tube.—10,620, E. Nicholls, Ventilator.—10,908, G. Farini, Door Springs,.—10,555, S. Hazeland, Machine for Planing Wood.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

15,359, A. Bellamy, Travelling Cranes.— 9,264, W. Thrift, Draught Preventer for Window-sashes, &c.—9,684, J. Foote, Window-sashes.—9,948, H. Maurer, Porous Bricks.—9,956, C. Polain, Screw Nail.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

JUNE 28.—By *Fuller, Moon, & Fuller* (at Croydon): 114 to 128 (even), Stanley-rd., Croydon, f., 1,400*l.*; 30, Church-st., f., r. 40*l.*, 700*l.*

JUNE 29.—By *Dyer, Son, & Hilton* (at Sittingbourne): F.g.r. of 10*l.*, Pemberton-ter., Newington, Kent, reversion in 57 yrs., 268*l.*; f.g.r. of 7*l.*, Leigh-st., reversion in 60 yrs., 300*l.*; a plot of f. land, 310*l.*; f.g.r. of 3*l.*, High-st., reversion in 57 yrs., 91*l.*; f. house and shop, and plot of land, 540*l.*; f. enclosures of land, 34 a. or 39½ p., 1,200*l.*; "Breach Farm," 6a. or. 15 p., f., 690*l.*; f. enclosures of land, 34 a. 3 r. 3½ p., 640*l.*; five enclosures of f. land, 17 a. 1 r. 9½ p., 1,100*l.*; an enclosure of f. land, 6a. or. 19 p., 660*l.*; The "Manor of Newington," with its rights, &c., 25*l.*—By *Messrs. Spelmans* (at Norwich): "The Belt," Aylsham, Norfolk, and 209 a. 3 r. 30 p., f. and c., 7,200*l.*; "The Spa Farm," 38 a. 1 r. 17 p., f. and c., 900*l.*; a small farm, 109 a. 1 r. 12 p., f. and c., 2,400*l.*; a plot of land, 3 a. or. 16 p., f. and c., 140*l.*; f. cottage and 0 a. 2 r. 6 p., 70*l.*

JULY 2.—By *P. M. Puckridge*: "West Stowell Farm," 407 a. 3 r. 14 p., Pewsey, Wilts., f. 7,500*l.*—By *Wyer, Farmer, & Adams*: 22, 24, Blair-st., Poplar, f., 650*l.*—By *Rutley, Son, & Vine*: 9, Little Drummond-st., Euston-sq., u.t. 24 yrs., g.r. 13*l.*, 70*l.*—By *Waterer & Son*: "Elmswood," Walton-on-Thames, and 7 acres, f., 3,050*l.*—By *J. C. Platt*: Nos. 149 to 155 (odd), Hammersmith-rd., f., r. 190*l.*, 3,500*l.*; 34, 36, Boston-pl., Dorset-sq., u.t. 26 yrs., g.r. 4*l.* 4*s.*, 210*l.*—By *Fuller, Moon, & Fuller*: 9, Broad Hinton Rd., Clapham, u.t. 48 yrs., g.r. 4*l.* 10*s.*, r. 28*l.*, 285*l.*; 12 to 16, Warwick-rd., Anerley, u.t. 82 yrs., g.r. 31*l.* 5*s.*, 590*l.*—By *J. Hibbard & Sons*: f.g.r. of 5*l.*, Cobden-rd., Norwood, reversion in 62 yrs., 110*l.*; f.g.r. of 6*l.*, Holland-ter., ditto in 72 yrs., 110*l.*; f.g.r. of 21*l.*, St. Stephen's-rd., Old Ford,, &c., ditto in 74 yrs., 420*l.*; 1 to 4, Marlborough-ter., Harrow, u.t. 91 yrs., g.r. 12*l.*, 435*l.*; 7 to 10, Bellevue-rd., Hendon, u.t. 85 yrs., g.r. 16*l.*, 320*l.*; 3 to 6, Belgrave-ter., u.t. 87 yrs., no g.r., 45*l.*; 63, 64, Summerley-st., Earlsfield, u.t. 86 yrs., g.r. 12*l.* 12*s.*, r. 52*l.*, 220*l.*; 2, Keswick-ter., u.t. 86 yrs., g.r. 8*l.* 8*s.*, r. 40*l.*, 240*l.*; 44, Ferntower-rd., Canonbury, u.t. 55 yrs., g.r. 6*l.* 6*s.*, r. 42*l.*, 400*l.*; 42, Ferntower-rd., u.t. 55 yrs., g.r. 6*l.* 6*s.*, r. 42*l.*, 400*l.*; By *White & Sons*: "Heath Cottage," with grounds, near Dorking, f., r. 40*l.*, 975*l.*; enclosures of f. land, 14 a. 1 r. 24 p., 1,225*l.*; "Rookery Farm" and 5 a. 3 r. 7 p. f., r. 55*l.*, 1,550; f. Meadow Land, 31 a. 2 r. 28 p., 1,550*l.*; a plot of f. land. 0 a. 1 r. 12p., 55*l.*; several cottages, and 2 a. 1 r. 26 p., 1,470*l.*; Blacksmith's Forge, f. r. 20*l.* 11*s.*, 590*l.*; a f. cottage residence, 450*l.*; a f. house and shop, r. 20*l.* 11*s.*, 450*l.*

JULY 3.—By *H. Donaldson*: 4, Rochford-st., Kentish Town, u.t. 56 yrs., g.r. 5*l.*, 250*l.*; 300, Old Ford-rd., Victoria-pk., u.t. 60 yrs., g.r. 8*l.*, r. 42*l.*, 420*l.* By *Messrs. Spelmans:* at Norwich: "Mile End House," and 1 a. 3 r. 0 p., Eaton, near Norwich, f., 2,200*l.*; 85, Thorpe-rd., Norwich, f., 1,550*l.* By *Hunter & Hunter*: No. 150, Regent-st., and 26, Warwick-st., u.t. 25 yrs., g.r. 127*l.* 3*s.* 4*d.*, r. 850*l.*, —two-fifth shares realised, 4,000*l.* 39, 47, Lupton-st., Kentish Town, u.t. 73 yrs., g.r. 14*l.*, r. 88*l.*, 850*l.*; 244, Ashmore-rd., Paddington, u.t. 85 yrs., g.r. 7*l.*, r. 40*l.*, 315*l.*; By *Inman & Co.*: 18, 20, Princess-st., Edgware-rd., u.t. 27 yrs., g.r. 30*l.*, 360*l.*; 28, 30, 32, 68, Princess-st , u.t. 27 yrs., g.r. 60*l.*, 700*l.*; 70, 72, Princess-st., u.t. 27 yrs., g.r. 31*l.* 10*s.*, 340*l.*; 7, Kildare-ter., Bayswater, u.t. 56 yrs., g.r. 6*l.*, r. 55*l.*, 435*l.*; 23, 25, Granville-rd., Kilburn, u.t. 68 yrs., no g.r., 420*l.*; 22, 24, 26, Chichester-rd., u.t. 63 yrs., g.r. 18*l.*, 800*l.*—By *Debenham, Tewson, & Co.*: L.g.r. of 10*l.*, St. Paul's-rd., Camden Town, u.t. 50 yrs., 180*l.*; l.g.r. of 30*l.*, Stratford-pl., u.t. 54 yrs., 630*l.*; i.g.r. of 50*l.*, Wrotham-rd., u.t. 56 yrs., g.r. 10*l.*, 880*l.*; i.g.r. of 125*l.*, Clifton-gardens, Maida Vale, u.t. 54 yrs., g.r. 20*l.*, 2,500*l.*; i.g.r. of 74*l.*, Portsdown-rd., u.t. 44 yrs., g.r. 2*l.*, 1,140*l.*; i.g.r. of 52*l.* 10*s.*, u.t. 52 yrs., g.r. 2*l.*, 1,030*l.*; i.g.r. of 34*l.*, Randolph Mews, u.t. 56 yrs., g r. 2*l.*, 485*l.*—By *Chinnock, Galsworthy, & Co.* (at Oxford): "The Moat Farm" and 35 a. 1 r. 33 p., Black Bourton, Oxon, f., 800*l.*; "The Horse and Groom" public-house, f., 500*l.*; four cottages, f., r. 7*l.* 17*s.*, 120*l.*; enclosures of f. land, 31 a. 2 r. 13 p., 1,150*l.*; "Ashgrove Farm," Ardley, 522 a. 3 r. 13 p., f., r. 208*l.*, 3,200*l.*; "Ardley's Field Farm," 301 a. 1 r. 30 p., f., r. 100*l.*, 1,650*l.*; enclosures of f. land, 36 a. 2 r. 16 p., f., 560*l.*; f. residence and 2 a. 2 r. 32 p., r. 20*l.*, 440*l.*; sixteen cottages, with gardens, r. 53*l.* 10*s.*, 800*l.*—By *Driver & Co.* (at Leighton Buzzard): 10, Back Lane, Leighton Buzzard, f., 70*l.*; 38, Workhouse Lane, f., 150*l.*; 40 to 50 (even), Workhouse Lane, f., 360*l.*; a plot of f. land, 60*l.*, 53, 54, Hockliffe-rd., f., 165*l.*; three f. cottages, Wing, 105*l.*; f. house and 6 a. 1 r. 6 p., Ledburn, 550*l.*; a plot of f. land, 80*l.*; sixteen plots of f. land, Linslade, 1,000*l.*

JULY 4.—By *Matthews & Matthews*: "Browning Hall," York-st., Walworth, u.t. 970 yrs., no g.r., 1,300*l.*—By *J. R. Thornton*: A plot of f. land, Headstone-rd., Harrow, 77*l.* 10*s.*—By *E. Wood*: 31, Selbourne-rd., Denmark Hill, u.t. 68 yrs., g.r. 5*l.* 10*s.*, 230*l.*; 25, Nightingale-rd., Willesden, u.t. 91 yrs., g.r. 6*l.*, r. 32*l.*, 225*l.*; 14, Park Lane, Stoke Newington, u.t. 87 yrs., g.r. 10*l.*, 370*l.*

JULY 5.—By *J. & R. A. Wilson*: 37, Roland Gardens, Kensington, u.t. 96 yrs., g.r. 28*l.*, r. 135*l.*, 1,630*l.*—By *Newbon & Co.*: 8, Fortnam-rd., Holloway, f., 460*l.*; 28, Lancaster-rd., Stroud Green, u.t. 82 yrs., g.r. 8*l.* 10*s.*, r. 40*l.*, 405*l.*; 4, Clissold-rd., Stoke Newington, u.t. 54 yrs., g.r. 7*l.*, 390*l.*—By *G. B. Hilliard & Son*: "Southlands Farm," Runwell, Essex, and 133 a. 2 r. 36 p.., f., 1,425*l.*: "Longfords Farm," 29 a. 2 r. 12 p., near Pitsea Station; and enclosures of land, 17 a. or. 14 p., 505*l.*—By *Chinnock, Galsworthy & Co.*: "The Poplars," near Cambridge, and 6 a. 2 r. 27 p., f., r. 31*l.*, 860*l.*—By *Stimson & Sons*: f.g.r of 17*l.*, Portpool Lane, Holborn. reversion in 46 yrs., 400*l.*; 50, 52, Cowper-rd., Stoke Newington, f., r. 78*l.*, 968*l.*; No. 134, Camberwell-rd., f., r. 55*l.*, 720*l.*; 6, 8, Cork-st., u.t. 6 yrs., g.r. 3*l.*, 65*l.*; 52, 54, Nutcroft-rd., Peckham, u.t. 80 yrs., g.r. 9*l.* 10*s.*, 450*l.*; 41, 43, Ansdell-rd., u.t. 78 yrs., g.r. 8*l.*, r. 52*l.*, 510*l.*; 47, Ferndale-rd., Clapham, u.t. 76 yrs., g.r. 6*l.* 6*s.*, r. 32*l.*, 255*l.*—By *Douglas Young*: 11, Southwold-rd., Ciapton, u.t. 59 yrs., g.r. 7*l.*, r. 37*l.* 16*s.*, 250*l.*; 17, Southwold-rd., u.t. 59 yrs., g.r. 6*l.* 10*s.*, r. 32*l.*, 225*l.*; 117, Blenheim-cres., Notting Hill, u.t. 65 yrs., g.r. 8*l.* 8*s.*, r. 45*l.*, 390*l.*; 14 to 16, Tuckers-pl., Regent's-pk., u.t. 11 yrs., g.r. 10*l.* 10*s.*, 130*l.*; 9 to 23 (odd), Caistor-pk.-rd., West Ham, u.t. 85 yrs. g.r. 40*l.*, 655*l.*; 15, 17, and 19, Armitage-rd., Greenwich, u.t. 64 yrs., g.r. 12*l.*, 270*l.*; 2, Galetoch-st., u.t. 64 yrs., g.r. 4*l.*, 80*l.*; 11 and 12, Craven-pk., Willesden, u.t. 82 yrs., g.r. 12*l.*, 1,205*l.*; 43 and 45, Craven-pk., u.t. 82 yrs., g.r. 20*l.* r. 85*l.*, 695*l.*; 2, The Cres., u.t. 77 yrs., gr. 15*l.* 15*s.*, 350*l.*; The Cres., f.g.r. of 31*l.* 10*s.*, reversion in 77 yrs., 750*l.*; 19, Stonebridge-pk., u.t. 76 yrs., g.r. 14*l.* 14*s.*, r. 50*l.*, 360*l.*; f.g.r. of 14*l.* 14*s.*, reversion in 76 yrs., 365*l.*; 3 to 9, Purkin-rd., u.t. 86 yrs., g.r. 39*l.*, 855*l.*; 32 and 39, Dartmouth-pk.-rd., Highgate, u.t. 68 yrs. g.r. 17*l.* 8*s.*, 710*l.*; 3 and 4, Fleet Mews, u.t. 56 yrs., g.r. 13*l.*, 55*l.*; 1 to 6, Stanley-villas, Ponder's End, u.t. 81 yrs., g.r. 21*l.*, 360*l.*; f.g.r. of 10*l.*, Abbey-rd., Belvedere, reversion in 74 yrs., 210*l.*; By *Debenham, Tewson, & Co.*: "Hyde Cottage," Hendon, and 1 a. 0 r. 12 p., f., 1,350*l.*; a plot of f. land, 1 a. 3 r. 38 p., 870*l.*; 8, Gray's Inn Passage, Holborn, f., r. 52*l.*, 600*l.*; 17, Cross-st., Islington, f., 640*l.*; 77, 85, and 87, Hazelville-rd., Crouch End, u.t. 93 yrs., g.r. 35*l.* 10*s.*, r. 180*l.*, 1,800*l.*

JULY 6.—By *Flood & Sons*: 37, 39, Warlock-rd., Paddington, u.t. 69 yrs., g.r. 14*l.*, r. 83*l.*, 770*l.*—By *Towers, Ellis & Co.*: 13, Ashchurch-grove, Shepherd's Bush, u.t. 69 yrs., g.r. 6*l.* 6*s.*, 300*l.*—By *P. Hodson*: 9, 10, Railway-ter., Southgate, f., r. 90*l.*, 1,025*l.*; f.g.r. of 6*l.*, Holly Pk.-rd., reversion in 86 yrs., 115*l.*—By *R. W. Mann & Son*: Nos. 35 to 47 (odd), Balham Hill, f., r. 234*l.*, 2,830*l.*; 33, Balham Hill, f., r. 55*l.*, 750*l.*; 6, West-st., Finsbury Circus, u.t. 5 yrs., g.r. 5*l.*, r. 71*l.* 10*s.*, 250*l.*—By *Messrs. Cobb*: "Bavins," Northfleet, Kent, and 13 a. 3 r. 21 p., f., 4,550*l.*; "Swigs Hole Farm," Horsmonden, Kent. 157 a. 3 r. 27 p., f., 2,500*l.*; f. land, 4 a. 3 r. 13 p., near Folkestone, 120*l.*—By *Green & Son*: 1, 2, 7, Mosslea-rd., Penge, f., r. 84*l.*, 1,040*l.*

[Contractions used in these Lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G.	ton	8/0/0 0/0/0
Teak, E.I. ...load		10/0/0 18/0/0
Sequoia, U.S.ft.cu		2/3 2/6
Ash, Canada load		2/15/0 4/0/0
Birch, do.....		2/10/0 3/15/0
Elm, do.		3/10/0 4/15/0
Fir, Dantsic, &c.		2/5/0 3/5/0
Oak, do.		2/10/0 4/10/0
Canada		6/0/0 7/10/0
Pine, Canada red		2/15/0 3/5/0
Do. Yellow		2/15/0 3/0/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg..		5/0/0 6/10/0
Wainscot, Riga, &c., log		2/10/0 4/15/0
Odessa, crown....		2/10/0 4/15/0
Deals, Finland 2nd & 1st std 100		7/10/0 9/10/0
Do. 4th & 3rd ..		7/0/0 4/10/0
Do. Riga		7/10/0 9/0/0
St. Petersburg, 1st yellow		10/0/0 13/10/0
Do. 2nd yellow		8/10/0 10/5/0
Do. white		8/10/0 11/0/0
Swedish.....		7/10/0 15/10/0
White Sea.....		7/0/0 13/10/0
Canada, Pine 1st		22/0/0 29/0/0
Do. do. 2nd....		17/0/0 18/0/0
Do. do. 3rd, &c.		7/10/0 10/5/0
Do. Spruce, 1st		9/0/0 11/0/0
Do. do. 3rd & 2nd		6/10/0 9/10/0
New Brunswick		6/0/0 7/5/0
Battens, all kinds		2/0/0 15/0/0
Flooring boards, sq., 1 in. prep.		0/9 6 0/14/6
1st		0/9/0 0/11/6
Do. 2nd.....		0/7/0 0/11/6
Other qualities...		0/5/0 0/6 6
Cedar, Cuba .. ft.		/3½ /4½
Honduras, &c.		/3½ /4½
Mahogany, Cuba		/3½ /6
St. Domingo, cargo av.		/3 2/6
Mexican do. do.		/3 /4
Tobasco do. do.		/3½ /6
Honduras do. ..		/3½ /5½
Box, Turkey ton		4/0/0 13/0/0
Rose, Rio.....		7/0/0 18/0/0
Bahia		6/0/0 17/0/0
Satin, St. Domingo.....		0/0/5 0/1/0

TIMBER *(continued)*.		
Satin, Porto Rico		0/0/6 0/1/6
Walnut, Italian ..		0/0/3½ 0/0/7
METALS.		
Iron—Pig, in Scotland .....ton		2/1/11½ 0/0/0
Bar, Welsh, in London		5/12/6 5/15/0
Do. do. at works in Wales.....		5/2/6 5/5/0
Do. Staffordshire, in London.....		6/0/0 6/10/0
COPPER — British cake and ingot		41/0/0 41/10/0
Best selected ..		41/10/0 42/0/0
Sheets, strong ..		0/0/0 0/0/0
Chili. bars		38/12/6 38/17/6
YELLOW METAL		0/0/4 0/0/4½
LEAD — Pig, Spanish.....ton		9/11/3 9/12 6
English com. brands.....		9/12/6 9/15/0
Sheet, English, 6 lbs. per sq. ft. and upwards....		12/15/0 0/0/0
Pipe		12/5/0 0/0/0
ZINC — English sheet.....ton		19/0/0 19/0/0
Vieille Montagne		19/10/0 0/0/0
TIN—Straits.....		68/5/0 68/15/0
Australian.....		68/17/6 69/7/6
English Ingots..		72/0/0 72/10/0
Banca		71/0/0 72/0/0
Billiton		68/10/0 68/15/0
OILS.		
Linseed ..... ton		20/10/0 20/12/6
Cocoanut, Cochin		28/10/0 0/0/0
Do. Ceylon		23/15/0 0/0/0
Palm, Lagos.....		23/0/0 23/10/0
Rapeseed, English pale		21/0/0 0/0/0
Do. brown.....		19/10/0 0/0/0
Cottonseed ref....		20/0/0 21/0/0
Oleine		22/0/0 24/0/0
Lubricating, U.S.		4/0/0 5/0/0
Do. refined		5/0/0 12/0/0
TAR — Stockholm barrel		0/22/6 0/0/0
Archangel.....		0/21/0 0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursday.*]

ACTON.—For the erection of a pair of villa residences in Avenue-Road, Acton, W., for Mr. W. Page. Mr. Edward Monson, jun., architect, Acton Vale, W.:—

J. F. Collinson	£980	Foord & Son	£827
F. Bray	975	G. Hooper, Acton*	795
		*Accepted.	

ALFORD (Lincs.).—For the erection of a pair of cottages, Thurlby, for Lord Algernon Percy. Mr. Herbert Kirk, architect, County Surveyor's Office, Sleaford:—

J. & E. Seed	£450 0 0	J. Kune	£361 15 0
S. Sherwin	397 0 0	P. C. Hasnip & Son,	
C. Steadman	389 6 1	Alford (accepted)..	348 0 0
A. Wood	365 0 0		

AYLESBURY.—For the erection of villa residence in the Windover-road, Aylesbury, for Mr. J. E. Tayler. Mr. Guest Luckett, architect, Aylesbury:—

Sherwin	£1,129	Gibson	£960
Wallis & Son	1,025	Grimsdale*	735
Fincher	975	*Withdrawn.	

BARNSLEY.—Accepted for sewering, levelling, paving, &c., Orchard- and three other streets, at Wombwell, for the Local Board. Mr. Jno. Robinson, Surveyor, Local Board Offices, Park-street, Wombwell:—

Queen-street.

W. Johnson £296 15 6

Orchard-street.

W. Johnson £462 17 6

Victoria-road.

W. Broadbent £270 16 0

Melville-road.

W. Broadbent £516 2 4

[All of Wombwell.]

BARNSLEY.—Accepted for the erection of a wing to the hospital, Keadway, for the Town Council. Mr. J. Henry Taylor, C.E., Borough Surveyor, St. Mary's-place, Barnsley. Quantities by Surveyor:—

Masonry and Bricksetting.—H. & F. Turton, Stairfoot	£600 0
Slating.—G. Rymer, Barnsley	125 0
Carpentry and Joining.—Duncan & Jones, Stairfoot	350 0
Hot-Water Engineering.—Rogers & Squire, Barnsley	69 5
Plastering.—M. Fleming, Barnsley	120 10
Plumbing, Glazing, and Gas and Water-fitting.—Rogers & Squire, Barnsley	176 16
Painting.—Beaumon Bros., Barnsley	26 0
Sewers and Drains.—Beaumon Bros., Barnsley	120 0
Total.....	£1,613 11

BLYTH (Northumberland).—For the supply of 650 to 700 tons whinstone macadam, for the Local Board. Mr. William Winship, surveyor:—

John Lamb ..... 7s. 11d. per ton.
T. & M. Appleby, Embleton, Chathill (accepted) 8s. per ton.

BOLTON.—For the execution of sewering and street works (four contracts), for the Town Council. Mr. W. H. Brockbank, Borough Surveyor, Town Hall, Bolton:—

Wm. Pollitt, Pool-street, Bolton. At per schedule of prices.

BROMLEY (Kent).—For the execution of road works in the district, for the Local Board. Mr. Stanley Hawkings, Surveyor, Local Board Offices, Bromley. Quantities by the Surveyor:—

W. Coker	£938 18 0	Mayo & Co.	£570 3 3
Robertson & Grant	699 2 5	J. Mowlem & Co.,	
Fry Bros.	645 10 4	Grosvenor Wharf,	
T. Gabriel	645 11 2	London*	553 0 0
G. Wimpey & Co.	629 14 5	*Accepted.	

BURSLEM.—Accepted for new factory, Adelaide-street, Burslem, Staffordshire, for Messrs. R. Ludlow & Sons. Mr. A. R. Wood, architect, Tunstall, Staffs.:—

W. Grant, Burslem £3,605 0 0

CARDIFF.—For additions, &c., to "Clarence" Hotel, St. Mary-street. Mr. Edwin Seward, architect, Queen's Chambers, Cardiff. Quantities by the architect:—

Hatherly & Carr	£1,691 17 7	E. Turner & Sons	£934 0 0
Hy. Lewis & Son	1,034 0 4	F. S. Lock	925 0 0
Dd. Davies	1,020 0 0	W. Symonds & Co.,	
John Gibson	1,010 0 0	Cardiff (accepted)..	895 0
Jones Bros.	971 0 0	W. Bowen & Co.	892 15

CONTRACTS AND PUBLIC APPOINTMENTS.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Making up Roads, Paving, &c.	Beckenham Loc. Bd.	J. A. Angell	July 16
Additions to Chapel, Plassey, Penarth	.....	Jones & Thornley	July 17
Mortuary, Workhouse	Coventry Union	G. & I. Steane	do.
Schools, Alma-road	Rotherham School Bd.	H. L. Tacon	do.
Roads and Sewers (1,600 yards)	Hayward's Heath Loc. Board	*Official*	do.
Passenger Station, Ely, near Cardiff	G. W. Ry. Co.	do.	do.
Eighty Houses, Heckmondwike	L. & N. W. Ry. Co.	do.	July 18
*Purbeck Kerb	Woking Local Board	do.	do.
Engine and Boiler House, &c	Stockport Corp.	A. M. Fowler	do.
House and Farm Buildings, Trontal, Seathwaite	Thos. Butler	.....	do.
Kerbing, &c. Pontefract-road	Castleford (Yorks.) L.B.	A. Smithies	July 19
Pipe Laying (24 miles), East Kilbride, &c.	Lanark County Coun.	Leslie & Reid	do.
Additions to Schools, Tolleshunt D'Arcy, Essex	.....	P. M. Beaumont	do.
*Fever Hospital, Shooters Hill	Met. Asylums Board	T. W. Aldwinckle	do.
Additions to Schools, Stinford, &c. Dorchester	Managers	.....	do.
Culvert, Norden, near Rishton, Lancs.	Committee	J. B. McCallum	do.
*Cupboards and Wardrobes, S.E. Hospital	Met. Asylums Bd.	*Official*	do.
Station Buildings, Gloucester	M. R. Co.	do.	do.
Water Supply, Rathdrum, Ireland	Rathdrum Union	do.	July 20
Wesleyan Chapel and Schools, Keighley	.....	W. & J. B. Bailey	do.
Waterworks, &c.	Ballyshannon (Ireland) Union	W. F. Gilcriest	July 21
Parish Hall, Ancrum, N.B.	J. H. Russell	.....	do.
*Broken Granite	Harrow Local Board	T. Charles	do.
Kerbing, Channelling, &c.	Cheshunt Local Board	R. Towlson	July 23
Twin Brick Sewer, Mount Sion	Bury (Lancs.) Corp.	J. Cartwright	do.
*Paving Roads	Southgate Loc. Bd.	C. G. Lawson	do.
*Alterations and Additions	Newington Reform Club	*Official*	do.
Re-building Bridge, Sandbeck West, near Richmond, Yorks	County Authorities	do.	do.
Two Groynes and Outfall, East Cliff	Dover Town Council	do.	July 24
*Stabling	West Ham Council	Lewis Angell	do.
*Cottages on Claybury Asylum Estate	L. C. C. Asylums Com.	G. T. Hine	do.
*Making-up Roads	Tottenham Local Bd.	P. E. Murphy	do.
*Machinery for Drainage Works	East Molesey Lc. Bd.	J. C. Mellis	July 25
*Sewer and Road-Making	Hammersmith Vestry	H. Mair	do.
*Broken Granite	North Walsham L. Bd.	do.	do.
Sewer Extension, Hawkshead	Ulverston U.R.S.A.	J. Greenwood	do.
Waterworks, Helmdale, N.B.	Sutherland C. C.	Jas. Fraser	do.
*Six Sanitary Spurs	Hants County Asylum	J. Robinson	do.
*Sanatorium Buildings	Tunbridge Wells Corp.	H. M. Caley	do.
*Water Supply and Warming Apparatus, E. Hospital	Met. Asylums Bd.	A. & C. Harston	do.
*Schools, Causeway, Fishponds	Stapleton School Board	H. M. C. Hurst	July 26
Additions to Farm, Cumblands, Drigg, Cumberland	Wm. Thompson	.....	July 27

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*External Iron Staircases	West London Sch. Dist.	*Official*	July 27
*Hydrants and Fire Extinguishing Apparatus	do.	do.	do.
*Electric Lighting Station, &c.	Tunbridge Wells Corp.	A. Ardron	do.
Baths and Washhouses, Gallowgate	Newcastle-on-Tyne Crp.	G. Kyle	July 28
School and Classrooms, Sutton-in-Ashfield	Primitive Methodist Chapel Trustees	.....	do.
Schools, Merrywood, Bedminster	Bristol School Board	*Official*	July 30
*Storage Reservoirs, &c.	Nelson Corp.	J. Newton & Son	do.
Sewage Disposal Works	Loughborough T. C.	A. W. Cross	July 31
*Nineteen Shops and Houses	Lee Lodge Estate	F. & W. Stocker	Aug. 2
Sewerage Works	Doncaster U.R.S.A.	*Official*	Aug. 3
*Additional Block at Workhouse	Christchurch Union	E. H. Burton	Aug. 25
*Painting Works, &c. Devizes	War Department	*Official*	No date
*Painting Works, &c. Brighton	do.	do.	do.
Police Station, Burscough	Lancashire Joint Com.	F. & G. Holme	do.
School Chapel, Howard-street, Burnley	Primitive Methodist Connexion	A. Robinson	do.
Sewer, Nell-lane	Withington (Lancs.) Local Board	A. H. Mountain	do.
Additions to Six Houses, Cuerden-terrace	Burnley Bldg. Society	Thos. Bell	do.
School Enlargement, Hilgay, Norfolk	Rev. Canon Beechey	.....	do.
Two Cottages, Llandrindod, Wells	W. Price	.....	do.
Additions to Schools, London-road	Nottingham Sch. Bd.	Evans & Jolley	do.
Club Premises, Stroud	.....	Wm. Clissold	do.
Additions to School, Springfield, Chelmsford	.....	F. E. L. Harris	do.
Warehouse, Shop, &c. Wateraide	Lincoln Equit. Co.-op. Indus. Soc. Ltd.	F. Smith	do.
Offices, Queen-street, Peterboro'	Rippon & Co.	Jas. Ruddle	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Sanitary Inspector	Islington Vestry	104*l.* &c.	July 20
*Headmaster	Newcastle-under-Lyme School of Art	.....	July 24
*Clerk of the Works	Shoreditch Guardians	4*l.* 4s. weekly	do.
*Clerk of the Works	Hull Branch Library	3*l.* weekly	July 25
*Professorship of Architecture	University College, Liverpool	375*l.* &c.	do.
*Assistant Surveyors, R.E. Civil Staff	Civil Service Com.	.....	Aug. 3

Those marked with an asterisk (*) are advertised in this Number. *Contracts, pp.* iv., vi., viii., *and* xx. *Public Appointments, p.* xviii.

CARLOW.—For the erection of a Masonic Hall, Athy-street, for the Carlow Freemasons. Mr. Wm. Morrison architect, Ogles's Hotel, Carlow. No quantities:—

Samuel Coleman	£725 0 0
Isaac Weir, Carlow (accepted)	670 0 0

CHESHAM.—For the supply of granite kerbs, flags, cubes, &c., and laying same, for the Local Board. Mr. C. L. Whitehead, junr., C.E., Chesham. Quantities by engineer:—

F. Dupont	£452 10 2	Lee & Sons	£383 18 0
Free Bros.	422 11 6	The Patent Indurated Stone Co.	234 0 1
W. A. Shephard	400 0 0	Jones' Annealed Stone Co.	208 7 11
Wm. Wadey	352 13 0	Messrs. Hall & Smith	Not tabulated
Hiram Moorcroft	344 11 11	Messrs. E. J. Van Praagh & Co	Not tabulated
The Imperial Stone Co.	333 13 9	Messrs. Walton Bros.	Per schedule of prices
The Victoria Stone Co.	310 15 10		
Croft Patent Granite Co., Croft, near Leicester*	306 1 0		
Stuart's Granolithic Stone Co.	301 8 5		

* Accepted.

DARENTH.—For the erection of a staff block, and making alterations and additions to the laundry at the School for Imbeciles at Darenth, Kent, for the Metropolitan Asylums Board. Messrs. A. & C. Harston, architects, 15, Leadenhall-street, E.C. Quantities by Mr. W. T. Farthing:—

Godson & Son	£8,897 0 0	Holliday & Greenwood	£7,979 0 0
Shillitoe & Son	8,431 0 0	W. Johnson & Co.	7,970 0 0
E. Lawrance & Son	8,207 0 0	C. Miskin, St. Albans*	7,950 0 0
H. Wall & Co.	8,100 0 0		
Leslie & Co.	8,025 0 0		

* Accepted.

DARTFORD.—For the construction of class-rooms, at the schools, Wilmington, for the School Board. Mr. G. H. Tait, C.E., Lowfield-street, Dartford:—

Goodhead	£573	Naylar & Son	£384
Ellingham	463	Martin, Dartford*	375

* Accepted subject to approval of Educational Department.

EXETER.—For the execution of work at the Lower Market, for the City Council:—

Ball	£246	Westcott	£175
Kingwell	197	Gibson	135
Digging	183	Phillips, Paris-street*	127

*Accepted.

FROME.—For the supply of 40 tons c.i. socket, &c., pipes, for the Rural Sanitary Authority. Mr. Allen Greenwell, C.E., Surveyor's Office, Fromefield, Frome:—

Thomas Spittle, Ltd.	£268 15 7	The Stanton Iron Works, Ltd.†	£252 14 0
R. Laidlaw & Sons	268 6 4	The Staveley Coal & Iron Co., Ltd. †	238 17 6
Cochrane & Co.	265 2 9		
J. & S. Roberts, Ltd.	257 10 0		
J. Coates & Co., Ltd., London, E.C.*	£249 18 0		

* Accepted.
† Incomplete.
[Engineer's estimate, £262.]

HOLMESFIELD (Derbyshire).—For the erection of school buildings, for the School Board. Mr. Walter J. Sykes, architect, Hoyland, near Barnsley:—

For the whole of the work.

Greenwood & Co.	£1,568 0 0
Hy. Harrison & Son	1,526 13 0
Thos. Margerrison & Son	1,271 15 0
Ellis Outram, Holmesfield (accepted)	1,091 10 0

Slaters.

Wm. Cooper	195 0 0
Chadwick & Sons	124 0 0

Plasterers.

Chadwick & Sons,	28 0 0

Plumbers G. and P.

Chadwick & Sons	88 0 0
W. Hy. Rawlin	79 19 0
Mellowes & Co.	85 0 0

KEA (Cornwall).—For erecting Kea Church, near Truro, Cornwall, for the Vicar and Churchwardens, from designs by Mr. Geo. H. Fellowes Prynne, 6, Queen Anne's-gate, Westminster, S.W. Quantities by Mr. R. Henry Hale, surveyor, 33, Old Queen-street, Westminster, S.W.:—

C. & J. Harris	£5,802 13 5	Sampson Trehane	£4,533 0 0
Jas. Julian	4,971 0 0	J. Goad & Co.	4,371 0 0
Philip Blowey	4,829 0 0	A. Carkeck	4,062 13 6

LEAMINGTON.—For the erection of school buildings, &c., Leicester-street. Mr. Frederick Foster, architect, Leamington and Coventry:—

Kimberley	£6,806 0	T. Bailey	£5,945 14
G. Hill	6,106 0	R. Bowen	5,815 0
A. A. Wincott	6,071 0	G. F. Smith & Sons	5,770 0

[Architect's estimate, £5,850.]

LONDON.—For interior painting at Crampton-street School, for the London School Board:—

V. Goad	£574 0 0	Leek & Hooker	£385 0 0
Rice & Son	453 0 0	Star & Son*	369 16 0
Triggs	405 0 0		

* Accepted.

LONDON.—For redraining and sanitary work, 2 and 2a, Hanover-street, for Mr. Collins. The Sanitation Co., Lim., surveyors:—

Wright	£139 11 0	Star & Son*	£105 0 0
Drillon	105 10 0		

* Accepted.

LONDON.—For the erection of parochial institute, &c., for the parish of St. Mary, Haggerston, Mr. Richard J. Lovell, architect, 46, Queen Victoria-street, E.C.:—

L. H. & R. Roberts	£1,797 0 0	Kevan	£1,210 0 0
Holloway	1,699 0 0	Ivory	1,183 10 0
Gordall	1,235 0 0		

LONDON.—For the enlargement of the reporters' gallery in the Council-chamber, for the London County Council. Mr. T. Blashill, Architect:—

Higgs & Hill	£803	Mowlem & Co.	£195
Patman & Fotheringham	198	Holloway Bros.*	158

*Accepted.

LONDON.—For the supply of a sludge vessel, for the London County Council:—

C. Hansen & Sons	£57,000 !	Palmer's Shipbuilding and Iron Co., Ltd.	£24,500
Thames Ironworks Co.	30,200	W. Simons & Co.	24,250
Lobnitz & Co.	29,000	R. Stephenson & Co., Ltd.	24,060
H. McIntyre & Co.	26,500	Naval Construction and Armaments Co.	23,750 !
Gourlay, Booth, & Co.	26,520		
Fleming & Ferguson	24,900		
W. B. Thompson & Co., Ltd.	24,694		

LONDON.—For the erection of a generating station in connexion with the electric lighting of the Victoria Embankment, for the London County Council:—

Kirk & Randall	£5,916	Foster & Dicksee	£5,562

LONDON.—For the supply and fixing of telescopic weirs at Barking outfall precipitation works, for the London County Council:—

Thames Ironworks Co.	£2,011 6 0	J. Cochrane	1,226 12 0
Phœnix Foundry Co.	1,612 2 0	A. Handyside & Co., Lim.	1,012 16 0
Owens & Co.	1,518 0 0	R. Moreland	877 0 0
Hunter & English	1,399 16 0		
Pulsometer Engine Co.	1,346 10 2		

LONDON.—For taking up old and laying new drainage system throughout, at Oban-street School, for the London School Board:—

Dent & Hellyer	£1,414 0	Peattie & Axtell	£1,045 0
Colls & Sons	1,380 0	T. White & Son	1,009 12
M. Calnan & Co.	1,325 0	J. T. Robey	1,007 0
E. Triggs	1,185 0	W. Gregar & Son	994 0

LONDON.—For pulling down No. 19, Marshall-street, W., and erecting new officers' quarters, task rooms, and disinfector, for the Guardians of the Westminster Union. Messrs. Jno. Waldram & Son, surveyors, 13, Buckingham-street, Adelphi, W.C. Quantities supplied:—

J. B. Colwill	£2,395	Harris & Wardrop	£1,966
F. G. Minter	2,321	B. E. Nightingale	1,962
C. P. Roberts	2,240	Johnson & Manners	1,955
D. Laing	2,209	T. Nicholson	1,930
Matthews Bros.	2,128	Johnson & Co., Ltd.*	1,925
H. & E. Lea	2,115	Danes & Co.	1,898
J. Bendon	2,106	W. Wells	1,895
Lansdown & Co.	1,997	J. O. Richardson	1,893
N. Lidstone	1,988	Godson & Sons	1,800
W. A. Pryor	1,975		

* Accepted.
[Surveyor's estimate, £2,025.]

LONDON.—Accepted for kerbing, channelling, &c., Wynell-road, Forest Hill, for the Lewisham Board of Works. Mr. John Carline, Surveyor, Board of Works Office, Catford, London, S.E.:—

J. Mowlem & Co., Millbank	£733 0 0

LONDON.—For wood-paving works, Gloucester-road, Palace Gate, &c., for the Vestry of St. Mary Abbott's, Kensington. Mr. Wm. Weaver, C.E., Surveyor, Town Hall, Kensington High-street, London, S.W.:—

	Glo'ster-rd., Pal. Gate.	Church-st. and Silver-st.
	s. d.	s. d.
Improved Wood Pavement Co.*	7 6	7 6
Nowell & Robson	8 11	8 7
Wimpey & Co.	7 11	8 0

* Accepted.

LONDON.—For the erection of residence in Carlos-place, Mount-street, for Mr. G. Festa. Messrs. Lewis H. Isaacs & Henry L. Florence, architects:—

Langdale & Hallett	£10,987 10 0	Bush & Sons	£10,120 0 0
G. H. & A. Bywaters	10,741 0 0	Worsley & Co.	9,971 10 0
Simpson & Son	10,437 16 6		

LONDON.—For alterations and repairs to St. John's Church, Broad-court, Drury-lane, for the Vicar, Churchwardens, and Church Council. Messrs. Gordon M. Hills & Son, architects. Quantities by Mr. Charles A. Bassett Smith:—

Cornish & Gayner	£2,200	Dove Bros.	£1,860
A. J. Hocking	2,030	Norris & Sons	1,695
S. Hunt	1,895	Howard & Co.	1,669

LONDON.—For alterations at No. 680, High-road, Tottenham, N., for Mr. G. Grippes. Mr. Alfred Richards, surveyor, 18, Finsbury Circus, E.C.:—

M. A. Humphreys & Son	£250 0	A. Porter	£97 15
H. Knight & Son	106 10		

LONDON.—For the erection and completion of New Armoury and Officers' Divisional Quarters, at Clerkenwell, E.C., for the 3rd. Middlesex Artillery Volunteer Corps. Mr. C. J. C. Pawley, architect, 2, Prince's Mansions, Westminster, S.W. Quantities by Mr. Henry Bushell, F.S.I.

W. King & Son	£1,258	Turtle & Appleton	£1,060
Langdale, Hallett, & Co.	1,200	Battley, Son, & Holness	997
Prestige & Co.	1,159	Hawkins & Wright, London*	888
Holloway Brothers	1,112		

* Accepted conditionally.

LONDON.—For the erection of a patients' block and two staff blocks at the Eastern Hospital, the Grove, Homerton, for the Metropolitan Asylums Board. Messrs. A. & C. Harston, architects, 15, Leadenhall-street, E.C. Quantities by Mr. W. T. Farthing:—

W. Shurmur	£14,580	W. Johnson & Co.	£13,460
Shillitoe & Sons	13,250	Lawrance & Sons	12,430
Holliday & Greenwood	12,977	Leslie & Co.	12,277
H. Wall & Co.	12,725	G. E. Todd, 192, Hackney-road (accepted)	12,158
C. Miskin	12,471		

LONDON.—For a junior mixed school on the site in Canterbury-road, Old Kent-road, to provide accommodation for 252 children, for the School Board for London. Mr. T. J. Bailey, Architect :—

		For brick-work in cement, add
W. Downs	£7,718	£120
D. Charteris	7,512	105
Holliday & Greenwood	7,377	137
Stimpson & Co.	7,320	159
S. & W. Pattinson	7,219	110
E. Lawrance & Sons, Wharf-road, City-road (recommended for acceptance)	7,125	119

LONDON.—For carrying out various improvements to the St John's-lane School, Clerkenwell, for the School Board for London. Mr. T. Bailey, Architect :—

		For brick-work in cement, add
N. Lidstone	£4,131	£30
J. Grover & Son	4,001	30
G. S. S. Williams & Son	3,851	25
C. Cox	3,823	27
McCormick & Sons	3,782	22
E. Lawrence & Sons, Wharf-road, City-road*	3,706	25

*Recommended for acceptance.

LONDON.—For the erection of an addition to the school on the site in Swan-street, Minories, to provide accommodation for 232 children, for the School Board for London. Mr. T. J. Bailey, Architect :—

		For brick-work in cement add
J. & F. Collinson	£3,995	£65
J. Grover & Son	3,839	85
W. M. Dabbs	3,787	86
Treasure & Son	3,660	112
C. Cox	3,591	74
A. Reed & Son	3,587	58
E. Lawrance & Sons	3,485	74
T. L. Green, Eagle-street, Holborn*	3,447	75

*Recommended for acceptance by the Works Committee.

LONDON.—For the enlargement of the boys' and girls' departments of the Ricardo-street School, Poplar, by thirty-four places, and for the provision of a laundry centre, for the School Board for London. Mr. T. J. Bailey, Architect :—

		For brick-work in cement, add
W. Holt & Son	£2,628 3 11	£12 10 0
Johnson & Co.	2,110 12 0	15 0 0
McCormick & Sons	2,100 0 0	12 10 0
W. Gregar & Son	2,065 0 0	14 0 0
J. & C. Bowyer	2,049 0 0	15 0 0
Mid-Kent Building and Contracting Works, Ltd.	1,982 14 3	15 1 0
A. Reed & Son, Stratford*	1,870 5 0	7 0 0

* Recommended by the Works Committee for acceptance.

LONDON.—For the erection of a centre for woodwork in connexion with the Old Castle-street School, Whitechapel, for the School Board for London. Mr. T. J. Bailey, Architect :—

W. Gregar & Son	£549	M. Calnan & Co.	£442
J. Grover & Son	523	J. T. Robey	427
D. Gibb & Co.	519	T. White & Son, Bow*	335

* Recommended for acceptance by the Works Committee.

LONDON.—For providing and fixing a complete system of low-pressure hot-water apparatus for warming the whole of the Thornhill-road School, Barnsbury, as enlarged :—

J. Gibbs & Son	£869 17 0	G. Davis	£485 0 0
R. Dawson & Co.	595 0 0	Duffield & Co.	444 17 9
Maguire & Son	564 0 0	Purcell & Nobbs	442 0 0
Z. D. Berry & Sons	540 0 0	J. C. & J. S. Ellis, Sheffield*	425 0 0
W. G. Cannon	490 0 0		

* Recommended by the Works Committee for acceptance.

LONDON.—For providing and fixing a system of low-pressure hot-water apparatus for warming the Millfields-road School, Clapton, now in course of erection, for the School Board for London. Mr. J. T. Bailey, Architect :—

Maguire & Sons	£478 15 0	Jones & Attwood	£390 0 0
Messenger & Co.	441 0 0	W. Jenkins & Son	387 0 0
J. G. Wagstaff	426 0 0	Duffield & Co.	369 0 0
J. Wontner-Smith, Gray & Co.	399 0 0	W. G. Cannon	360 0 0
		W. Richardson & Co., Darlington*	303 0 0
Z. D. Berry & Sons	395 0 0		

* Recommended by the Works Committee for Acceptance.

LONDON.—For lavatories for the "Shaftesbury" training ship, for the School Board for London :—

M. Hall & Co.	£283 10 0	Dent & Hellyer	£220 0 0
B. Finch & Co.	280 0 0	G. Jennings*	196 0 0
J. Bolding & Sons	245 0 0		

* Recommended by the Works Committee for Acceptance.

LONDON.—For providing a new steam-boiler at the Upton House Truant School, Urswick-road, Homerton, for reconstructing the laundry and steam kitchen apparatus, and for carrying out other necessary work at the same time, for the School Board for London :—

Providing and fixing new steam boiler, reconstructing steam kitchen and laundry apparatus.

Fraser & Fraser	£490	J. & F. May	£399
Z. D. Berry & Sons	483	J. F. Clarke & Sons	310
W. G. Cannon	420	J. Fraser & Son*	241

Erecting a chimney-shaft for the new boiler in connexion with the heating apparatus.

W. Martin	£436 15	H. Knight & Son	£274
E. Lawrance & Sons	289 0	B. E. Nightingale	258
Foster & Dicksee	275 0	W. J. Davenport*	227

* Recommended by the Works Committee for acceptance.

LONDON.—Accepted for reinstating Bowles Wharf, Ratcliffe, after recent fire.

F. C. Hoskins, Westminster £1,616

LONDON.—Accepted for alterations, new cafe room, &c., at St. Bartholomew's and St. Margaret's Schools, Canonbury.

F. C. Hoskins Westminster £295 10

LONDON.—For the provision of manual training, cookery and laundry centres in connexion with the James-street School, Buckingham Gate, for the School Board for London. Mr. T. J. Bailey, Architect :—

		For brick-work in cement, add
J. G. Minter	£2,579 0 0	£55 0 0
D. Charteris	2,431 0 0	30 0 0
W. King & Son	2,029 0 0	42 0 0
J. Mowlem & Co.	1,917 16 4	27 2 5
Co-Operative Builders, Ltd.	1,883 0 0	41 10 0
J. Garrett & Son, Old Town, Clapham*	1,753 0 0	37 0 0

* Recommended by the Works Committee for acceptance.

LONDON.—For two new temporary iron buildings on the site in Westmoreland-road, Walworth, for the School Board for London. Mr. T. J. Bailey, Architect :—

Isaac Dixon & Co.	£1,553 0	E. C. & J. Keay, Ltd.	£1,117 0
T. Cruwys	1,300 0	A. Harbrow	921 10
Croggon & Co., Ltd.	1,125 0	Humphreys, Ltd.*	836 0
F. Morton & Co.	1,120 0		

* Recommended for acceptance by the Works Committee

LONDON.—For constructing new offices for the teachers of the St. Leonard's-road School, Bromley, and for providing a complete new system of drainage, for the School Board for London. Mr. T. J. Bailey, Architect :—

W. Downs	£1,910	E. Triggs	£1,280
Knight & Son	1,515	Calnan & Co.	1,249
Staines & Son	1,396	G. Newton	1,205
McCormick & Sons	1,358	J. T. Robey, Bow-rd.*	1,186

* Recommended for acceptance by the Works Committee.

MANCHESTER.—For the erection of school buildings and class-room, Chapelfield Schools, Stand, for Stand Independent Congregational Church. Messrs. Maxwell & Tuke, architects, 41, Corporation-street, Manchester. Quantities by architects :—

B. Powell	£1,850 0 0	A. Jones	£1,116 0 0
Hill & Heep	1,312 5 0	W. Rigby	1,080 0 0
Statham & Whitby	1,250 0 0	Thompson & Brierley	1,050 0 0
James Byrom	1,199 12 4	John Jackson & Sons, Whitefield, Man.*	1,040 0 0
J. Allen	1,140 0 0		

* Accepted.

MUKER-IN-SWALEDALE (Yorks.).—For the erection of a vicarage-house for the Rev. James Cook, Muker-in-Swaledale, Reeth, Richmond, Yorks. Messrs. Chorley & Connon, architects, 15, Park-row, Leeds. Quantities by architects :—

Masonry.—Christopher Peacock, Muker-in-Swaledale	£500 0 0
Carpentry.—T. Wetherald, Askrigg, R.S.O.	420 7 6
Plumbing.—J. Lindley, Leeds	102 0 0
Slating.—Watson & Worsnop, Leeds	100 0 0
Plastering.—R. Heslop, Armley, Leeds	136 16 6
Ironfounding.—Alf. Dougill, Leeds	69 7 0
Painting.—J. Snowden, Ossett, Yorks.	45 10 0
Total	1,374 1 0

MYTHOLMROYD (Yorks.).—For the erection of church-school and institute, Messrs. Jackson & Fox, architects, 22, George-street, Halifax :—

Mason and Excavator.—Emanuel Riley	£1,479 0 0
Carpenter and Joiner.—John Kershaw	541 10 0
Plumber and Glaziers and Heating Apparatus.—Boulton & Kershaw	217 19 6
Slater and Plasterer.—James Robinson	247 0 0
Painter.—James Robinson	60 0 0

NEATH.—For draining, kerbing, making, &c., Creswell-road :—

D. Love	£678 0 0	A. George	£389 9 0
W. Thomas	573 10 0	C. Harris, Jun., Neath*	339 10 0

*Accepted.

NEWBRIDGE (Mon.).—For the construction of an iron bridge, for the County Council. Mr. Wm. Tanner, County Surveyor, County Council Offices, Newport :—

Isca Foundry Co.	£1,818 0 0	Albert Richards	£1,330 0 0
M. Monks & Co.	1,595 0 0	Dyne, Steel, & Co.	1,259 0 0
E. H. Page	1,437 7 6	J. H. Firbank & Co.	1,170 0 0
Edwd. Finch & Co., Ltd.	1,430 10 0	Abercorn Engineering and Foundry Co., Ltd., Abercorn (accepted)	1,080 0 0
John Linton & Co.	1,425 0 0		
John Moseley	1,349 0 0		

NEWBRIDGE (Mon.).—For the erection of from six to nine cottages, Pentwynmawr, for Mr. T. M. Phillips. Mr. Evan Phillips, architect, Newbridge :—

C. F. Morgan	£1,582 0 0	J. Lewis	£1,389 0 0
Ellis Williams	1,530 0 0	Albert Richard. Newbridge, Mon.*	1,340 0 0
Davies Brothers	1,482 0 0		

*Accepted.

NEWBURN-ON-TYNE.—For relaying 420 yds. pipe sewers, West Lemington, for the District Local Board. Mr. Harry W. Taylor, Surveyor, Local Board Offices, Newburn-on-Tyne. Quantities by Surveyor :—

W. Maughan	£164 16 0	W. & I. Newton†	£90 0 0
W. Adamson	137 19 6	* Accepted. † Informal.	
Nicholson & Elliott Tantobie, R.S.O.*	94 12 6	[Surveyor's estimate, £91 19 0.]	

OBAN (N.B.).—For the formation of an esplanade and sea-wall, for the Burgh Commissioners. Mr. Alex. Shairp, C.E., Oban :—

W. G. Flitt	£1,917	John Adam & Co.	£1,295
W. M. Elroy & Co.	1,698	George McKay & Son, Carnoustie (accepted)	1,275
D. & J. McDougall	1,299		

OSWALDTWISTLE.—For alterations, &c., Mount Pleasant School, for the Trustees and Committee. Mr. Jonas Turner, architect, 7, Corporation-street, Accrington. Quantities by architect :—

Masons' work.

Riley & Barnes	£52 12 7	H. Ramsbottom, Accrington*	£43 0 0
George Adams	49 13 9		
W. H. Bury	46 9 6		

Joiners.

George Walsh	185 10 0
Accrington & Church Co-operative Society, Accrington*	£125 10 0

Plumbers.

John Robinson	£20 10 0	John Sudall, Oswaldtwistle*	£17 3 6
Carter & Son	18 10 0		

Plasterers.

Thos. Cronshaw	£13 0 0	Daniel Yates	£12 11 0

Altering apparatus.

John Bury	£7 18 0
Henry Wormald, Accrington*	7 10 0

*Accepted.

OXFORD.—For decorations, repairs, and sanitary work, &c., to "Water Hall," St. Aldates, Oxford. Mr. Ernest R. Barrow, architect, 7, John-street, Adelphi, London, W.C. :—

T. H. Kingerlee	£348 15 0

[Accepted with modifications.]

PLYMOUTH.—For additions, &c., to Greenbank-mews, for Mr. Wm. Hawke. Mr. James Harvey, architect, 9, Courtenay-street, Plymouth. Quantities by architect :—

Pellow	£560 0	Palmer	£455 0
Hosking	549 0	Roach & Lovell	455 0
Lethbridge & Son	545 0	Perriton	440 0
Goad & Co.	525 0	Blake	433 0
Coles	495 0	Panter & Davey	418 10
Wakeham Bros.	493 10	Pearce & Sons,*	369 0

[All of Plymouth.]
*Accepted.

PORTHCAWL.—For the extension of the National Schools. Messrs. Lambert & Rees, architects, Bridgend :—

Charles James, Porthcawl	£276 0 0

[Six tenders received.]

PURFLEET (Essex).—For additions to school buildings, for the West Thurrock School Board. Mr. Francis J. Sturdy, architect, 44, Finsbury-pavement, E.C. Quantities by Messrs. R. L. Curtis & Son :—

G. J. Hoskings	£585 0 0	Multon & Wallis	£519 0 0
J. Holland	580 0 0	H. R. Rous	499 0 0
A. Reed & Son	566 0 0	H. J. Carter	497 0 0
C. B. Rous	560 0 0	J. Pavitt	487 0 0
W. Pavey	535 0 0	T. Bruty	475 0 0
T. White & Son	532 0 0	S. Parmenter*	439 0 0
C. H. Binney	523 0 0		

*Accepted.

RADCLIFFE (Lancs.).—For widening bridge, &c., for the Local Board. Mr. W. L. Rothwell, surveyor, Local Board Office, Radcliffe. Quantities by surveyor :—

Etheridge & Clark, Cheetham Hill, Manchester .. £322 0 0

RAYLEIGH (Essex).—For the erection of new school for 120 infants, including offices and boundaries, at Rayleigh, for the Rayleigh School Board. Mr. Walter J. Wood, architect, 1, Finsbury Circus, E.C., and Southend, Essex. Quantities by Mr. Henry Bushell, F.S.I. :—

Ansell	£1,348	Woodhams	£1,084
Baker & Wisemen	1,320	Darke & Son	1,077
Norden	1,263	J. Gozzatt, Maldon*	1,045

* Accepted.

ROTHERHAM.—For additions &c., to school buildings, Kilnhurst, for the Swinton School Board. Mr. H. L. Tacon, architect, 11, Westgate, Rotherham. Quantities by architect.

E. J. Bower	£573 0	A. T. Ripley	£540 0
Geo. Pugh	571 0	Chadwick & Co.	531 10
Jno. Tradewell	565 10		

ROTHERHAM.—For additions, &c., to Kimberworth and Thornhill schools, for the School Board. Mr. H. L. Tacon, architect, 11, Westgate, Rotherham :—

Thornhill School.

F. Chas. Green	£116 10	S. Frugone	£94 5
F. Warden	110 0	Chadwick & Co.	90 0
A. T. Ripley	95 0	Rd. Snell, Rotherham*	88 17

Kimberworth School.

Chas. Green	£211 10	Rd. Snell	£172 0
Chadwick & Co.	190 0	A. T. Ripley	170 0
F. Warden	185 0	S. Frugone, Rotherham*	155 7

* Accepted.

ROTHERHAM.—Accepted for the erection of a boundary-wall at the workhouse, for the Union Guardians. Mr. H. L. Tacon architect, 11, Westgate, Rotherham :—

Geo. Anderson, Rotherham £149 10 0

ROTHERHAM.—For the erection of three shops and houses; also two dwelling-houses, Canklow, for the executors of the late Mr. R. J. Bentley. Mr. H. L. Tacon, architect, 11, Westgate, Rotherham. Quantities by architect :—

G. H. Smith	£1,699	Robert Snell	£1,500
Chadwick & Co.	1,600	Richd. Snell, Rotherham*	1,445
Thos. Tradewell	1,565	A. T. Ripley	1,350

* Accepted.

ROTHERHAM.—For forming a new street, &c., Canklow, for the executors of late Mr. R. J. Bentley. Mr. H. L. Lacon, architect, 11, Westgate, Rotherham. Quantities by architect :—

C. A. Walker	£318 5	Chas. Green	£225 0
Robert Snell	327 0	Robt. Hill, Rotherham*	198 0

*Accepted.

ROTHERHAM.—For the erection of municipal buildings, police offices, &c., Howard-street, &c., for the Corporation. Mr. Richard J. Lovell, architect, 46, Queen Victoria-street, London, E.C. Quantities by Mr. James Kennedy, 31, Great James-street, W.C. :—

Binns	£27,640 2 9	Hodson	£22,870 0 0
Chadwick & Co.	25,497 0 0	Warburton	22,800 0 0
Snell	24,950 0 0	Smith	22,534 0 0
Pallinson & Co.	24,500 0 0	Ives	22,400 0 0
Ripley	23,750 0 0	Arnold	22,060 0 0

ROTHERHAM.—Accepted for additions, &c., to the Wath and District Mechanics' Institute. M. H. L. Tacon, architect, 11, Westgate, Rotherham. Quantities by architect :—

Masons' work, &c.—Thos. Fuller	£260 0 0
Carpenters' work, &c.—Waddington Bros	138 0 0
Plumbing.—A. Bramham	31 1 1
Painting.—Ch. Spreight	10 10 0
	£439 11 0

[All of Wath-on-Dearne.]

SOUTHAMPTON.—For the supply and delivery of 1,000 tons broken Cherbourg or Guernsey granite. Mr. W. B. G. Bennett, Borough Surveyor, Municipal Offices, Southampton :—

	Per ton. s.	d.		
Sandell Bros., Southampton*	10	3	....	Guernsey granite.
A. & F. Manuelle	10	5	....	"
Wm. Griffiths	10	7	....	"
John Mowlem	10	9	....	"
John Hamley	10	9	....	"
R. L. & F. Fennings	10	9	....	"
G. Le Maitre	11	6	....	"
Sandell Bros., Southampton*	9	6	....	Cherbourg granite.
	8	9		
L. Somerfield	10	0	....	"
L. Somerfield	10	0	....	Lessines.
J. L. Lyon & Co.	10	0	....	Basalt.
Jas. Runnalls	10	0	....	"Penlee."
W. Chandley & Co.	11	0	....	Irish syenite.

*Recommended for acceptance.

STAFFORD.—For the erection of sanitary blocks, drainage and plumbing work, at Coton Hill Asylum, Stafford. Messrs. J. E. Willcox & Allen, engineers, Birmingham :—

H. Willcox & Co.	£4,194	J. Parnell & Sons	£3,837
A. F. Whittome	4,075	J. Barnsley & Sons	3,757
T. Robotham	4,075	H. Lovatt	3,739
J. Harley & Sons	3,946	J. Bowen, Birmingham*	3,597

* Accepted.

STOCKPORT.—For the erection of new schools in connexion with the Congregational Tabernacle Chapel, Middle Hillgate. Mr. C. R. Locke, architect, St. Peter's-square, Stockport. Quantities by the architect :—

J. Warnett	£1,650	Broadhurst & Co.	£1,325
J. Broadhurst	1,385	E. & W. Meadows	1,316
Brown Bros.	1,369	J. Briggs	1,283
G. Jackson	1,350	E. Derbyshire (accepted)	1,230
D. Eadie	1,333		

[All of Stockport.]

STOCKTON-ON-TEES.—For additions to boys' and girls' schools, Mill-lane Board Schools, Stockton-on-Tees. Messrs. Weatherill & Whipham, architects, Stockton-on-Tees :—

Johnson & Hanby	£3,889 0 0	A. J. Cooke*	£3,674 13 0
John Davison	3,800 0 0	W. C. Atkinson	3,660 4 5
Craggs & Benson	3,768 0 0	Perks & Son	3,650 3 10

* Accepted.

SWINTON (Yorks.).—For additions, &c., to school buildings; and erection of caretaker's house, Swinton Bridge, for the School Board. Mr. H. L. Tacon, architect, 11, Westgate, Rotherham. Quantities by architect :—

Jno. Tradewell	£1,235 0 0	E. J. Bower, Swinton*	£1093 12 9
A. T. Ripley	1,122 0 0		
Chadwick & Co.	1,101 0 0		

* Accepted.

TAMERTON.—For proposed new north aisle and heating chamber, Tamerton Church, Devon, for the Vicar and Churchwardens. From designs by Mr. Geo. H. Fellowes Prynne, 6, Queen Anne's Gate, Westminster, S.W. Quantities by Mr. R. Henry Hale, F.S.I., surveyor, 33, Old Queen-street, Westminster, S.W. :—

	Roborough Stone.		Polyphant Stone.	
Ambrose Andrews	£1,870 0 0	....	—	
J. Goad & Co.	1,800 0 0	....	£1,730 0 0	
John P. Berry	1,684 0 0	....	1,664 0 0	
Northcott & Maddock	1,590 17 0	....	1,500 0 0	
P. Blowey	1,535 0 0	....	1,450 0 0	
Jas. Julian	1,430 0 0	....	1,398 0 0	

TAVISTOCK.—For the construction of sewage works, for the Tavistock Rural Sanitary Authority. Mr. H. Masterton, C.E., 1, Buckland-street, Plymouth. Quantities by Mr. Ernest J. Scown, Plymouth:—

E. Duke	£2,026 18 8	W. H. R. Hill	£1,386 0 0
Matcham & Co.	1,990 0 0	W. C. Shaddock	1,327 0 0
J. Fisher	1,752 0 0	H. Weldon	1,274 8 10
J. Julian	1,466 0 0	J. Shaddock, Plymouth accepted)	1,205 16 9
G. Shillabear	1,450 0 0		

TORQUAY.—For the erection of promenade pier, for the Corporation. Mr. H. A. Garrett, C.E., Town Hall, Torquay. Quantities by Messrs. Corderoy & Selby, Queen Anne's Gate, London, and 12, George-street, Plymouth:—

	With landing stage in creosoted memel.	With landing stage in creosoted pitch-pine.
Arrol Bridge & Roof Co.	£19,356 7 9	£19,285 7 4
Tees Side Ironworks Co.	—	17,128 4 6
Lockerbie & Wilkinson	16,422 16 7	16,799 6 7
John Butler & Co.	16,429 8 0	16,195 2 5
G. Double	15,858 4 0	15,832 10 3
Mayoh Bros. & Hayley	15,887 11 11	15,775 16 11
Murdoch & Cameron	15,612 4 6	15,576 0 0
Cochrane & Sons	15,180 0 0	15,130 0 0
John Lysaght, Ltd.	15,171 12 11	15,019 0 11
Dixon Bros.	14,587 16 6	—
G. Shillabear	14,590 0 0	14,506 0 0
A. Thorne	14,402 0 0	14,253 0 0

TUNSTALL.—Accepted for new schools, High-street, Tunstall, for the Wolstanton School Board. Mr. A. R. Wood, architect, Tunstall:

Yorke & Goodwin, Tunstall £6,690 0 0

WARE.—For footway paving, kerbing, and channelling of Church- and Crib-streets, Ware, for the Ware Local Board. Mr. T. Hibbert, Surveyor, New-road, Ware:—

	For supply of 871 yards of 6 in. by 12 in. granite edge kerbs and 80 tons of 4 in. granite cube setts.	For supply of 30,000 10 in. by 5 in. by 2 in. best blue Staffordshire plain paving bricks.	For supply of cement, gravel, hoggin, &c., and all labour and cartage.
	£ s. d.	£ s. d.	£ s. d.
*William Griffiths, 283, Kingsland-road, London, N.	294 14 6	127 0 0	203 8 0
William Grimley & Son	292 19 8	—	—
Ed. Dewbury	—	—	343 16 9
E. J. Van Praagh & Co.	269 2 3	—	—
Fry Brothers	292 19 9	135 0 0	142 15 0
William Wadey	310 10 5	127 2 6	244 4 8
Eastwood & Co.	—	120 0 0	—
J. Boulcott & Co.	—	118 10 0	—
J. Mowlem & Co.	316 10 0	131 5 0	185 6 3
Samuel Trickett & Sons	309 13 10	127 10 0	—
Nowell & Robson	289 0 0	132 15 0	—
Doulton & Co.	—	120 0 0	—
A. & F. Manuelle	301 12 3	127 10 0	314 9 0
Thomas Hunt	310 4 9	114 15 0	—
D. Neighbour	312 8 3	117 0 0	355 5 0
Joseph Hamblett	—	115 10 0	—
South Staffordshire Blue Brick Co., Ltd.	—	135 15 0	—
Stanley Brothers	—	123 15 0	—
George Woolliscroft & Son	—	131 5 0	—
J. T. Wood & Brothers	—	114 7 6	—
P. & S. Wood	—	109 16 0	—
George Skey & Co., Ltd.	—	114 15 0	—
J. Knowles & Co.	—	115 15 0	—

* Accepted.

WARRINGTON.—For making-up the following streets:—Dale, Wright, Howard, Owen, Barnard, Clare, and Gatewharf-streets, for the Union Rural Sanitary Authority. Mr. Wm. Owen, architect, Cairo-street Chambers, Warrington. Quantities by architect:—

J. A. Ewart, 11, Palmyra-square, Warrington* ..£1,713 6 3
John Burnham, 6, Okell-street, Runcorn† £341 18 9

*Accepted for Wright, Howard, Barnard, Clare, and Gatewharf-streets.

†Accepted for Dale and Owen-streets.

WHALEYBRIDGE (Cheshire).—For the erection of six cottages, for the Oddfellows' Society. Mr. Chas. W. Johnson, architect, Whaleybridge. Quantities by the architect:—

Scattergood & Warrington	£1,296 19	David Drinkwater	£1,136 10
Joseph Clayton	1,148 13	Fredk. Oakes, Whaleybridge*	1,104 0

*Accepted.

TO CORRESPONDENTS.

J. P., W. A. B., W. D. (below our mark).—J. K. & S., S. S. P. (amounts should have been stated).—"Salus Populi Suprema Lex" (we regret that we cannot print your letter, but we have repeatedly stated that we cannot accept letters for publication unless authenticated by name and address).—W. D. (the style of your letter is not such as we can publish).

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

PUBLISHER'S NOTICES.

Registered Telegraphic Address, 'THE BUILDER,' LONDON.

THE INDEX and TITLE-PAGE for Volume LXVI. (Jan. to June, 1894) is given as a supplement with the present number.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE SIXTY-SIXTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, will be ready on the 18th inst.

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Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" cannot be guaranteed for any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the front Page should be in by TWELVE noon on WEDNESDAY.

SPECIAL.—ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before 10 a.m. on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent

PERSONS Advertising in "The Builder," may have *Replies addressed to the Office,* 46, Catherine-street, Covent Garden, W.C., *free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES, { NINEPENCE EACH. By Post (carefully packed) 1s.

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ESTABLISHED 1866.

J. J. ETRIDGE, Jr.

SLATE MERCHANT,

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THE BATH STONE FIRMS, Ltd.
BATH,
FOR ALL THE PROVED KINDS OF
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FLUATE, for Hardening and Preserving Calcareous Stones and Marbles.

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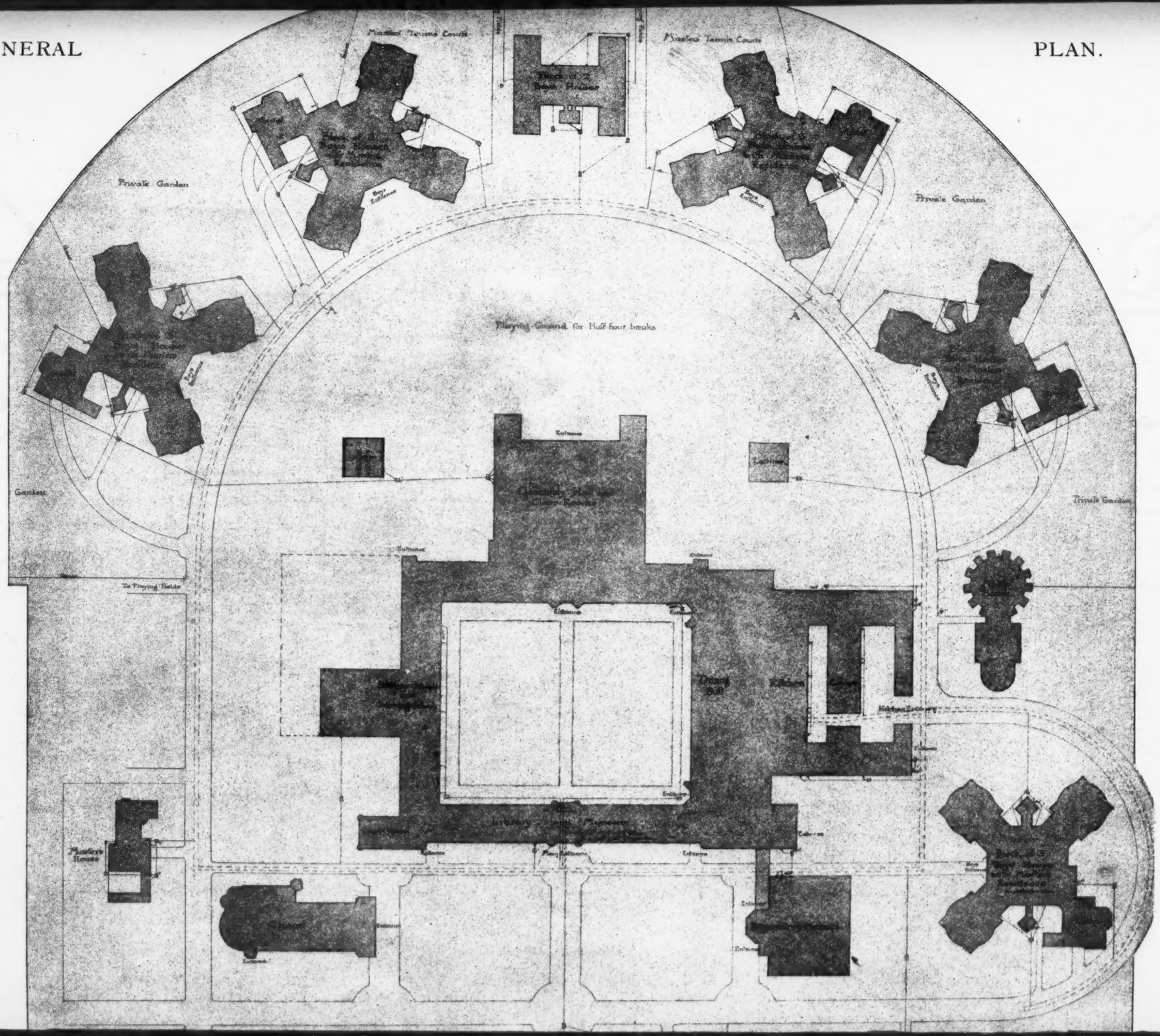
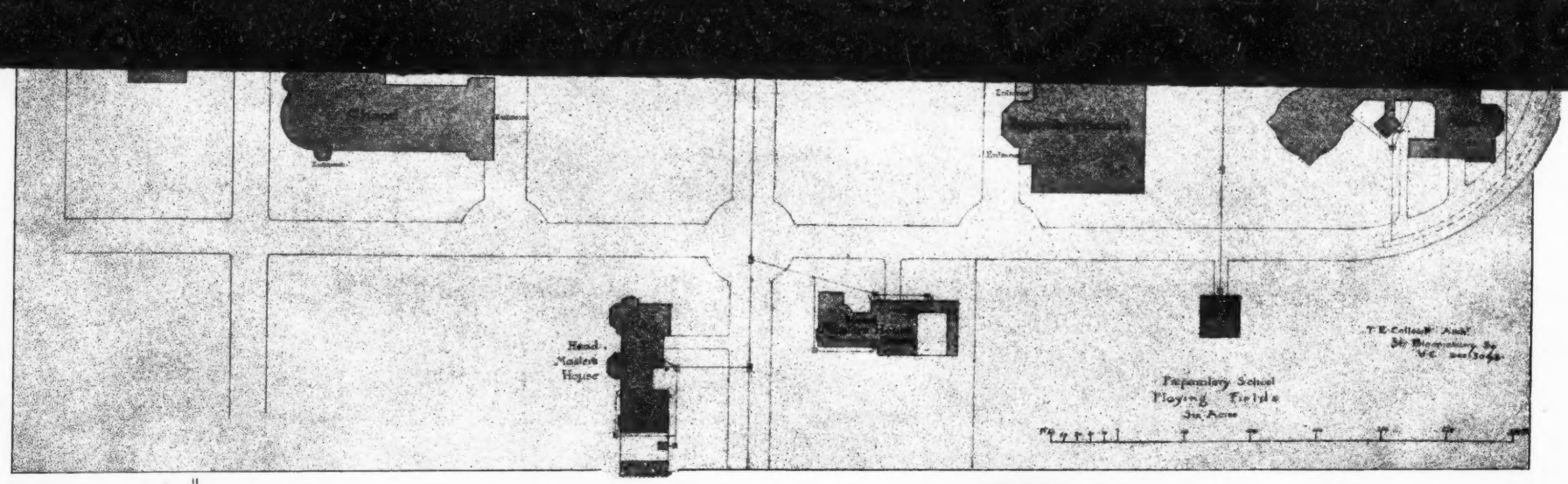
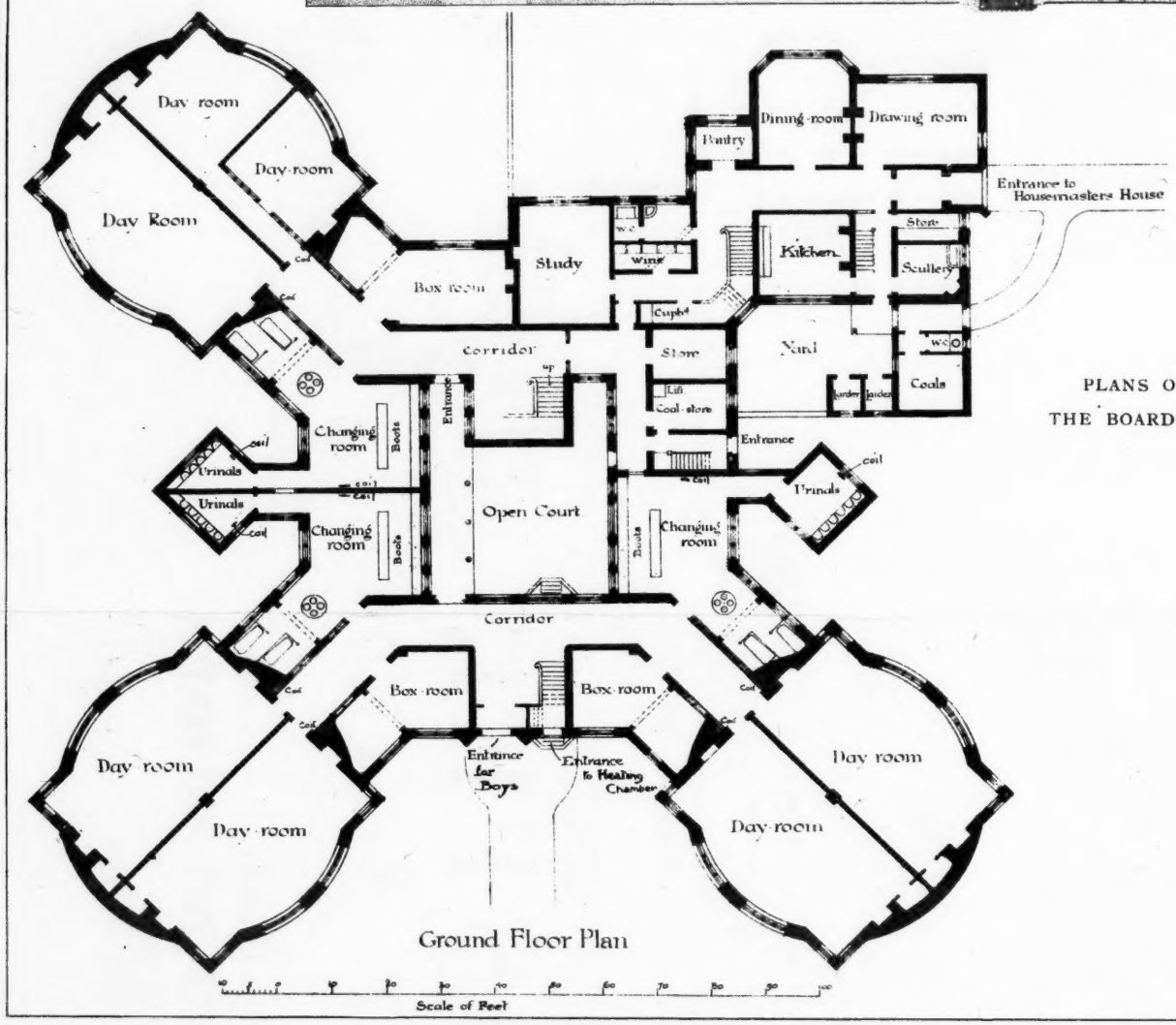
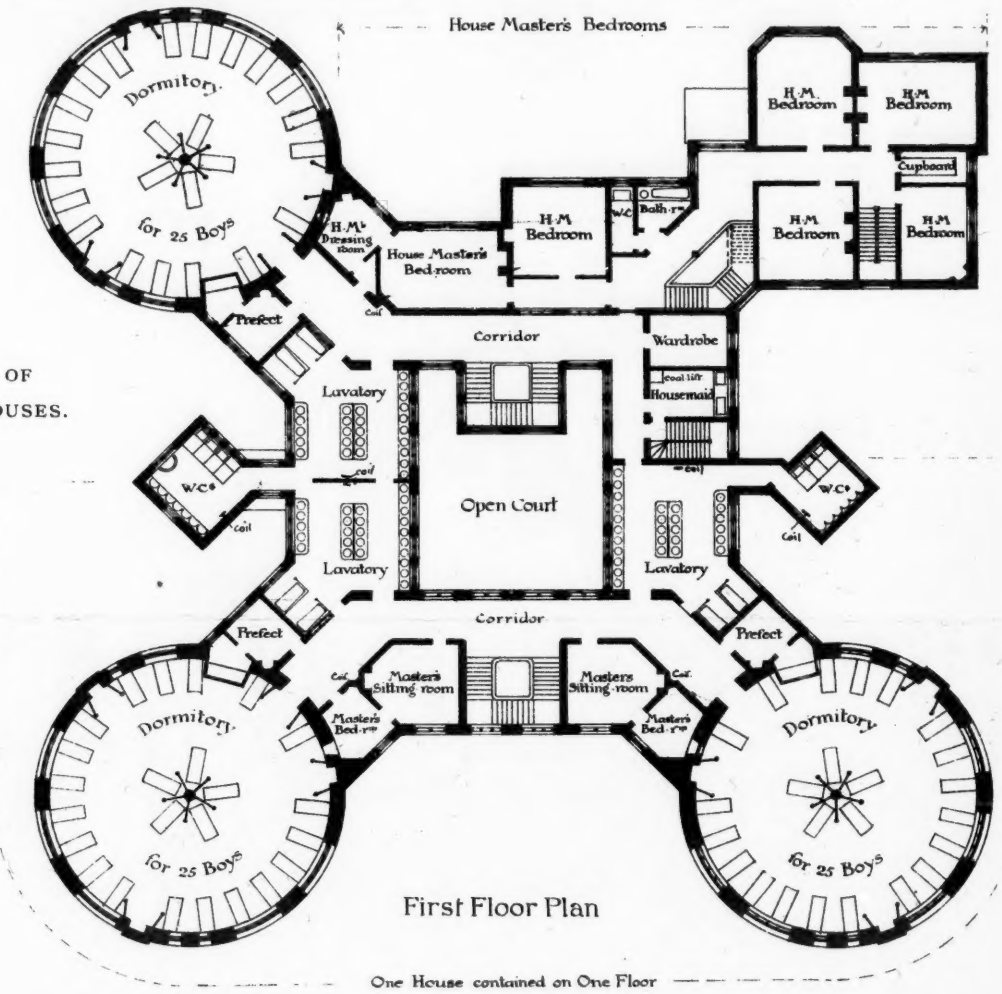
GENERAL PLAN.







PLANS OF ONE OF
THE BOARDING HOUSES.



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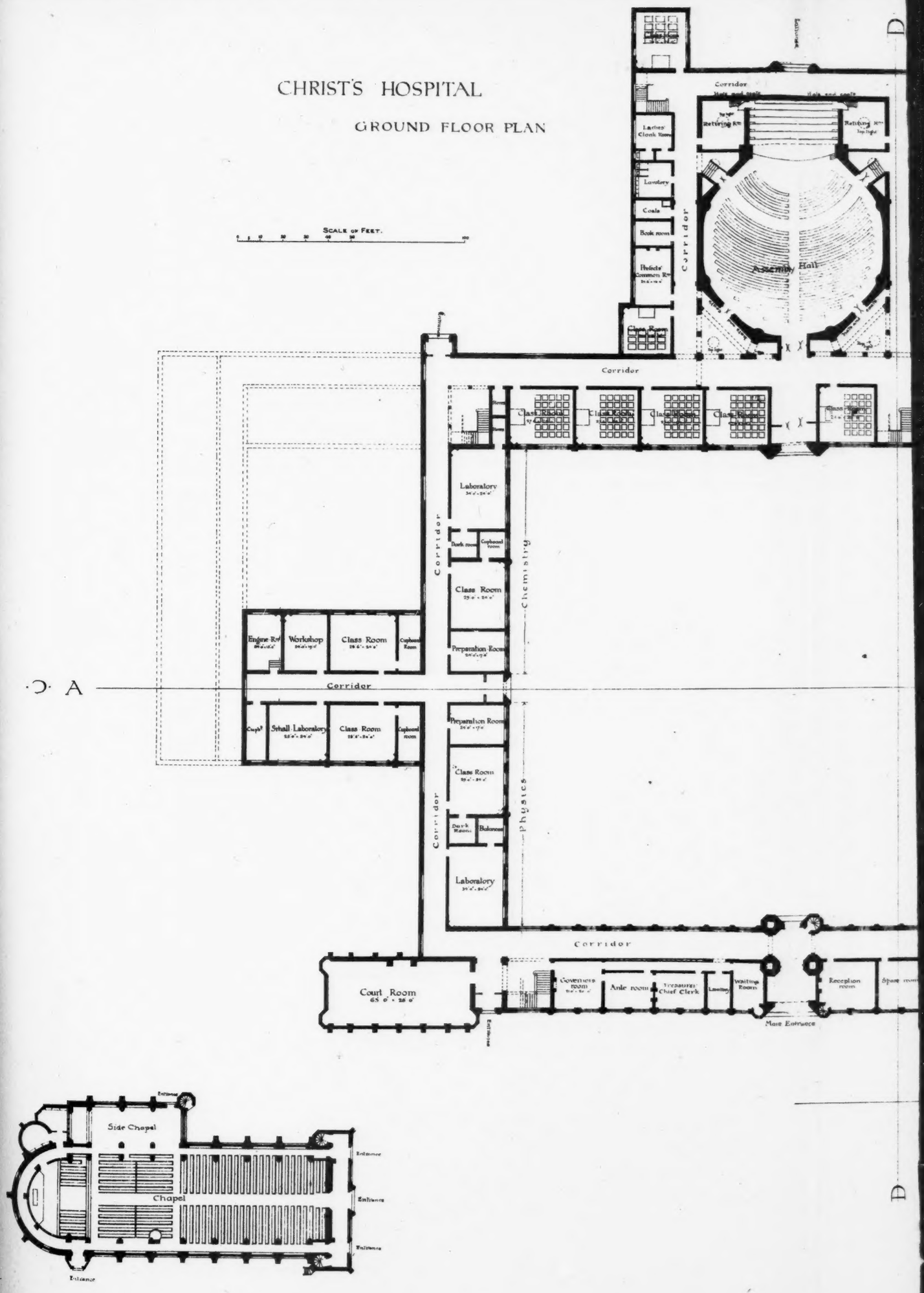
CHRIST'S HOSPITAL

GROUND FLOOR PLAN



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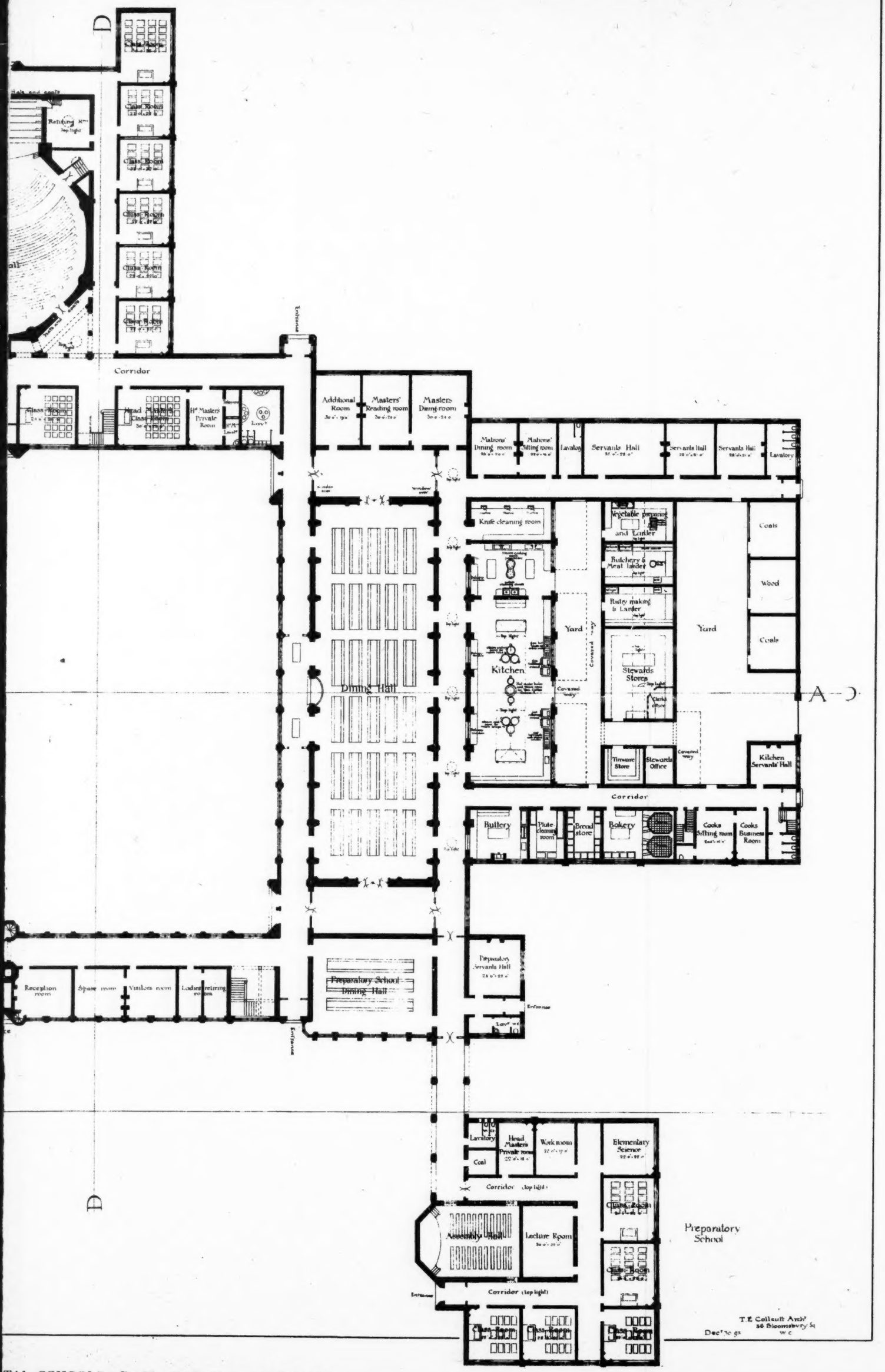
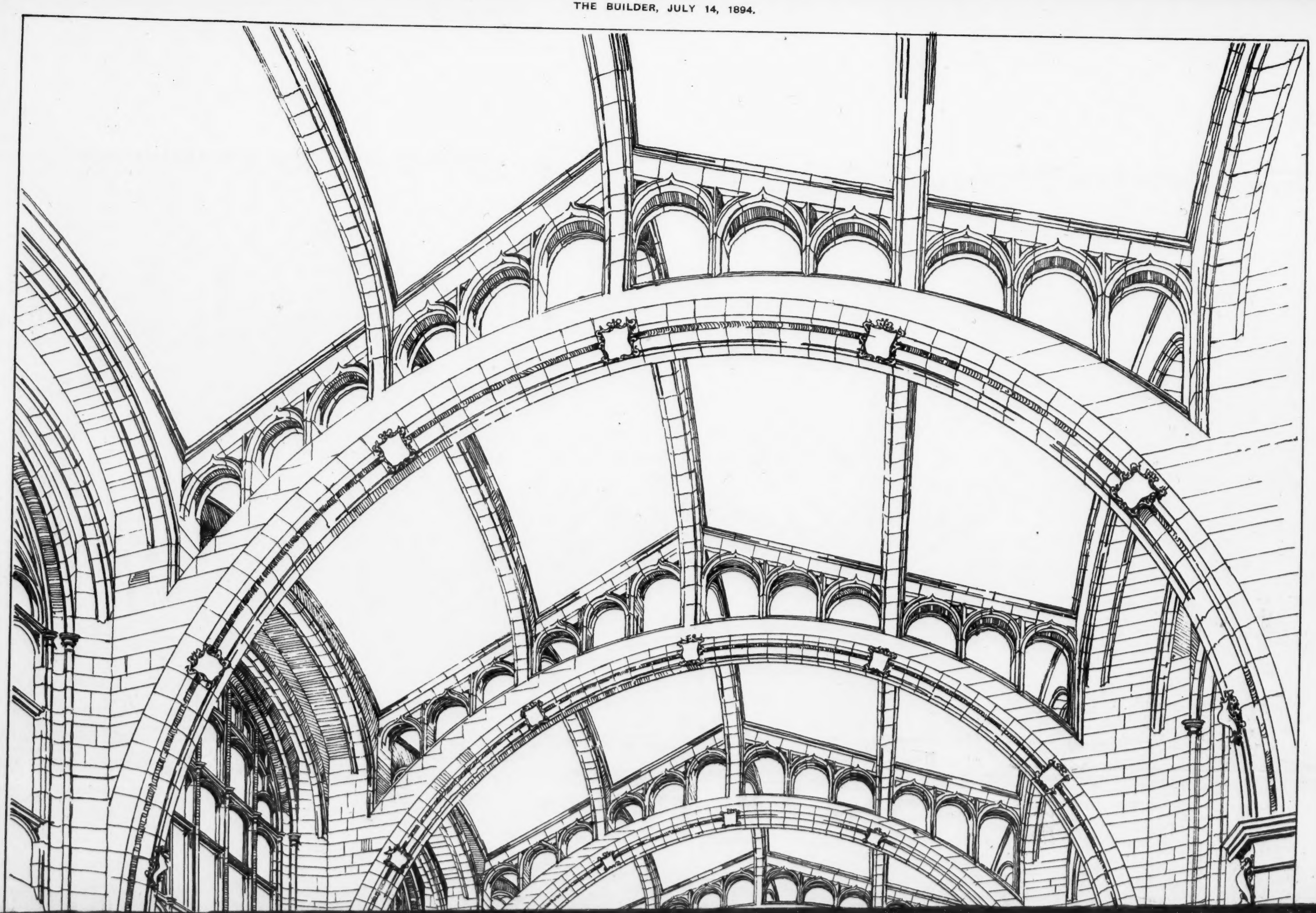
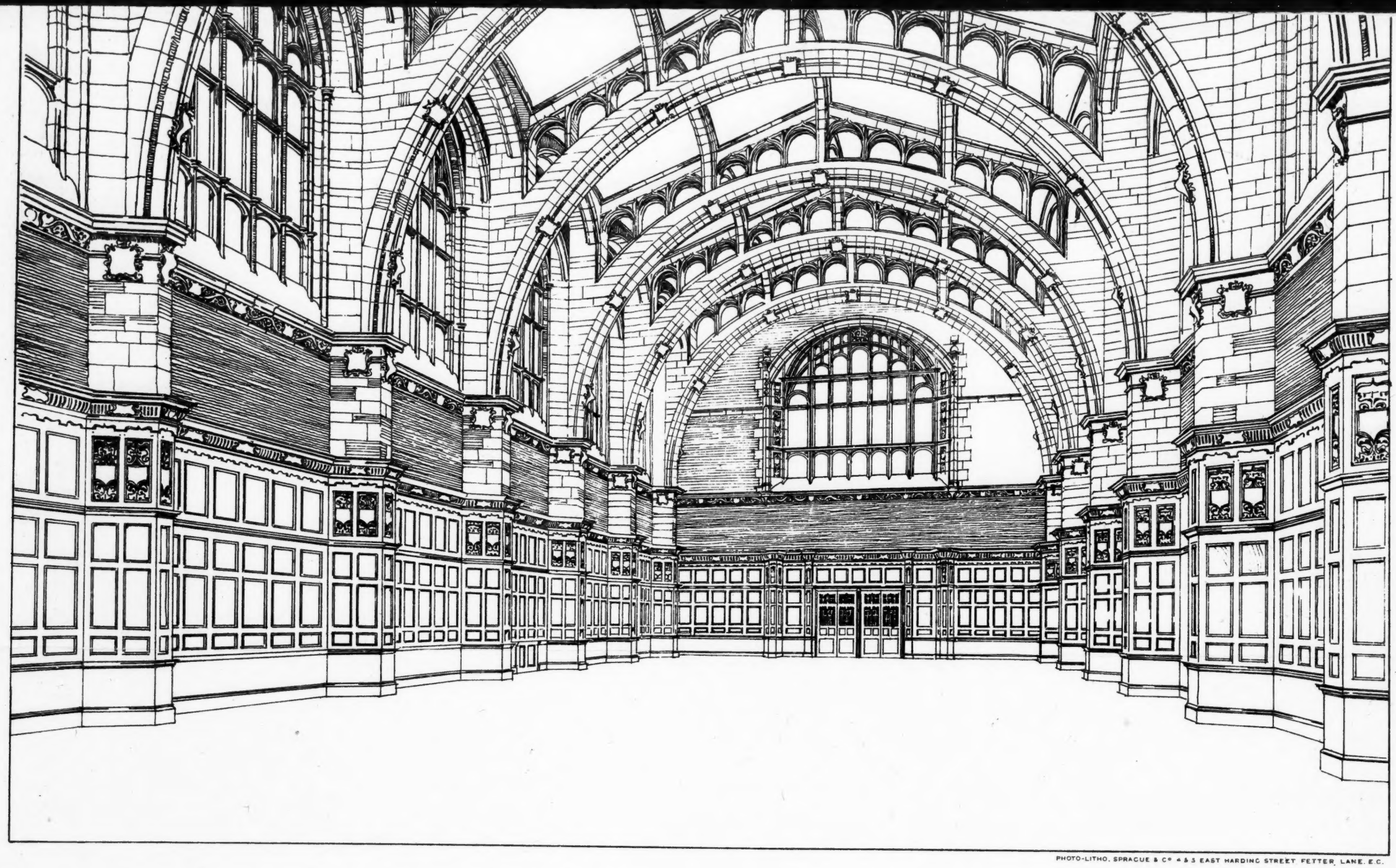
GROUND PLAN OF MAIN BLOCK.



TAL SCHOOLS.—By Mr T. E. Collcutt, F.R.I.B.A.

OF MAIN BLOCK.





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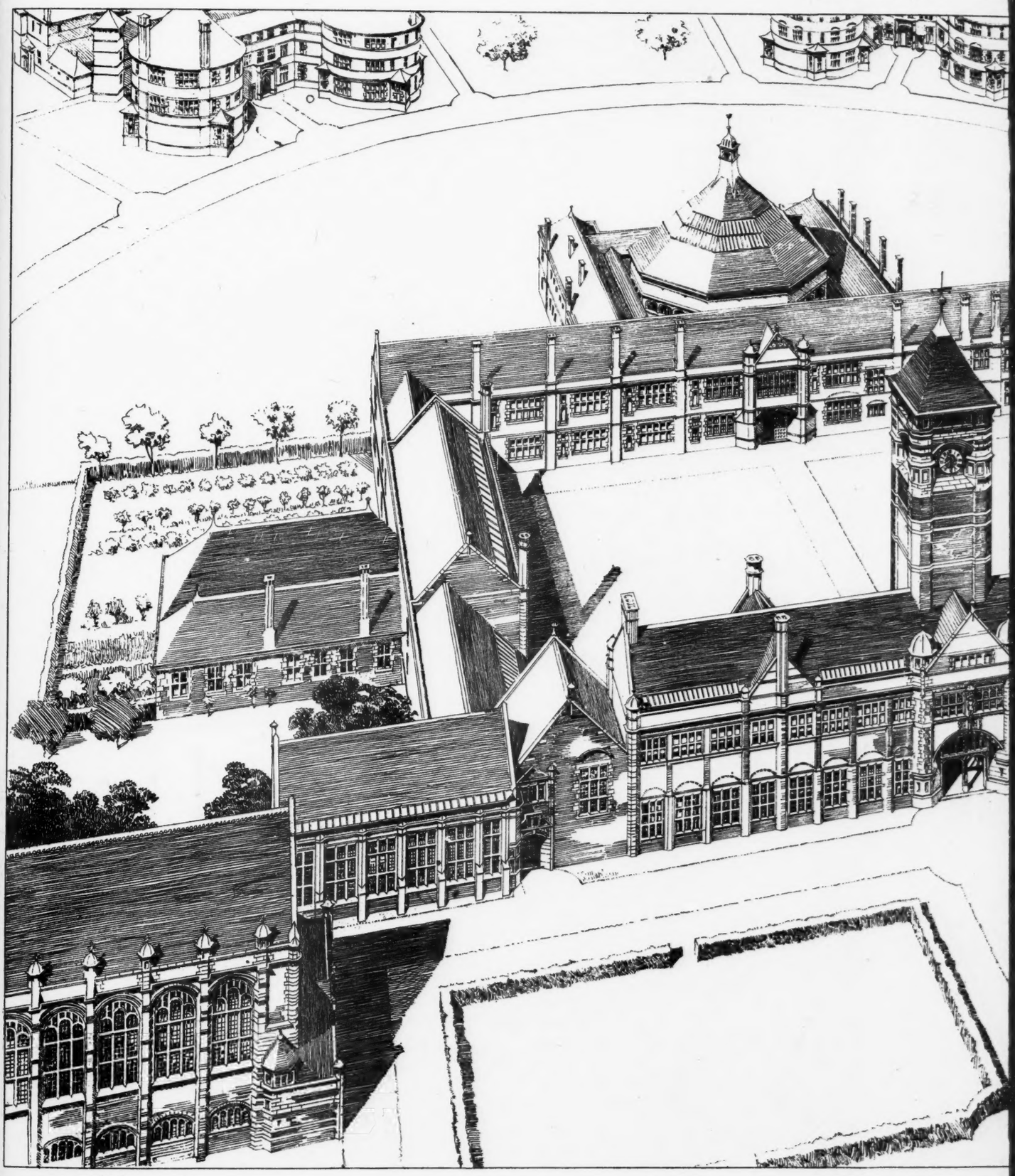
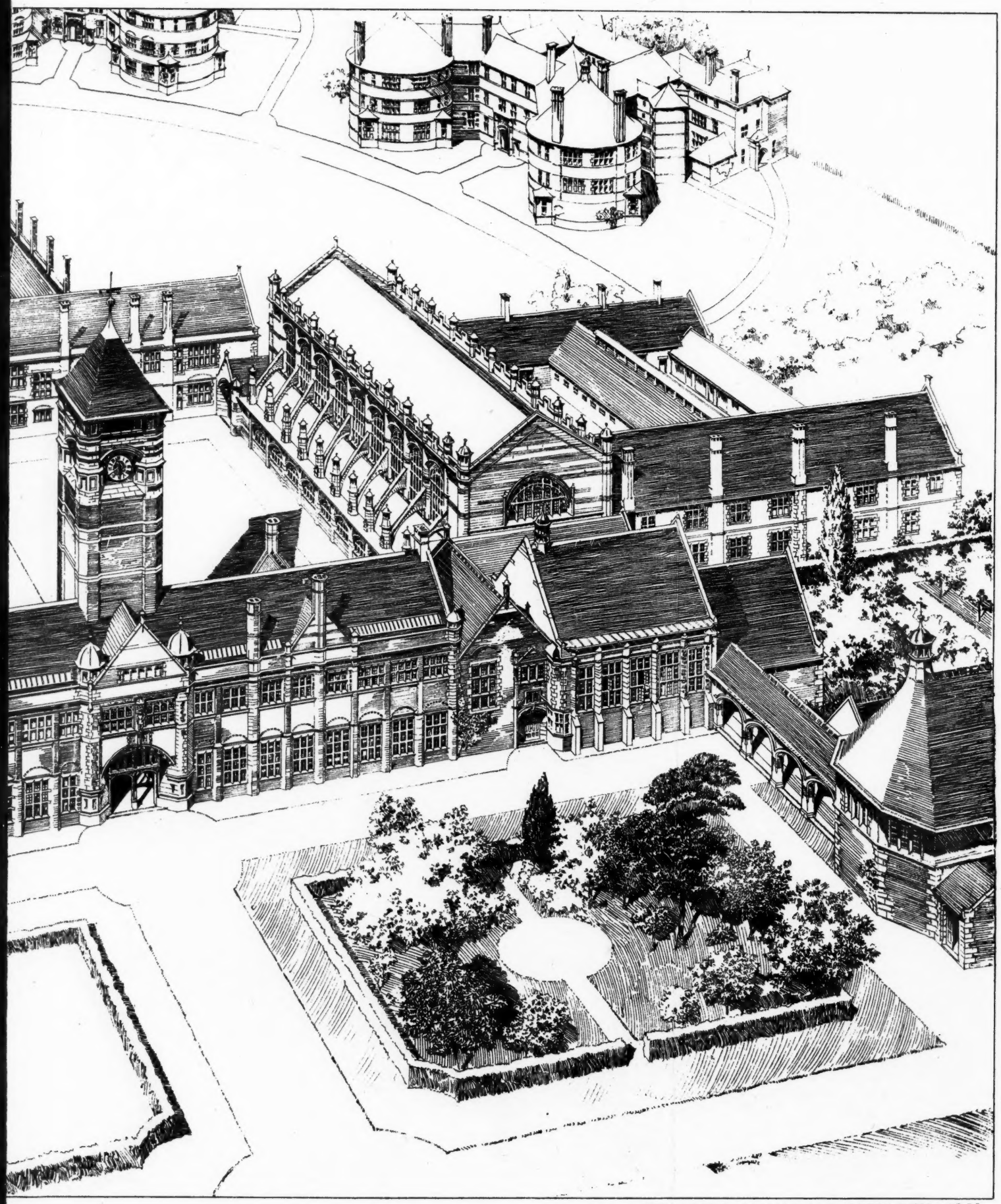
INTERIOR OF DINING HALL.



COMPETITION DESIGN FOR CHRIST'S HOSPITAL SCHOOLS.

GENERAL VIEW OF BUILDINGS.



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L VIEW OF BUILDINGS.